DOCUMENT RESUME

ED 438 188 SE 063 218

AUTHOR	Larson, Sandra, Ed.
TITLE	Beyond Dissection: Innovative Tools for Biology Education.
INSTITUTION	Ethical Science Education Coalition, Boston, MA.
PUB DATE	1998-02-00
NOTE	88p.
AVAILABLE FROM	NEAVS, 333 Washington St., Suite 850, Boston, MA 02108-5100 ($2). Tel: 617-523-6020; Web site: http://www.neavs.org/esec.html.
PUB TYPE	Reference Materials - Directories/Catalogs (132)
EDRS PRICE	MF01/PC04 Plus Postage.
DESCRIPTORS	*Anatomy; Audiovisual Aids; *Biology; Charts; Computer Software; Diagrams; *Dissection; Elementary Secondary Education; Higher Education; *Instructional Materials; Manipulative Materials; Multimedia Materials; Physiology; Science Education; Zoology

ABSTRACT

This catalog lists resources available for classroom use in teaching about anatomy and physiology which are alternatives to dissection. The entries are provided under three main categories: (1) Whole Animal Dissection/Vivisection; (2) Animal Organ or System Anatomy and Physiology; and (3) Other, including animal behavior, biotechnology, embryology, innovative teaching tools, school hatching projects, and wonder and respect. Each resource listing contains the product title, supplier/publisher contact information, description, price, and age range. Listings include models, slides, videos, computer programs, cards, charts, and other materials. (WRM)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 438 188

Beyond Dissection

Innovative Tools for Biology Education

PERMISSION TO REPRODUCE AND
DISSEMINATE THIS MATERIAL HAS
BEEN GRANTED BY

T Capaldo

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)

1

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

☒ This document has been reproduced as received from the person or organization originating it

☐ Minor changes have been made to improve reproduction quality

- Points of view or opinions stated in this document do not necessarily represent official OERI position or policy

PLEASE NOTE OUR NEW ADDRESS
Ethical Science and Education Coalition
333 Washington Street, Suite 850
Boston, MA 02108
(617) 367-9143

BEST COPY AVAILABLE

SE 063 218

ETHICAL SCIENCE EDUCATION COALITION

"I like to define biology as the history of the earth and all its life – past, present and future. The essence of life is lived in freedom. Any concept of biology is not only sterile and profitless, it is distorted and untrue if it puts its primary focus on unnatural conditions rather than on those vast forces not of man's making, that shape and channel the nature and direction of life.

It is essential that the beginning student should first become acquainted with the true meaning of his subject through observing the lives of creatures in their true relation to each other and to their environment. To begin by asking him to observe artificial conditions is to create in his mind distorted conceptions and to thwart the development of his natural emotional response to the mysteries of the life stream of which he is a part. Only as a child's awareness and reverence for the wholeness of life are developed can his humanity to his own kind reach its full development."

– Rachel Carson

Beyond Dissection

Innovative Teaching Tools for Biology Education

Edited By
Sandra Larson

Compiled By
Ethical Science Education Coalition
167 Milk Street #423
Boston, MA 02109-4315
(617) 367-9143

February 1998

Layout & Design
Signature Publications

Acknowledgments

For this our third edition, we would like to thank Dr. Barbara Bonner, Karl Gossot, Susan Solomon, Roberta Wright and Dr. Karin Zupko.

Our acknowledgements would not be complete without thanking the developers, manufacturers, and distributors of the many fine products contained within. Their contributions and cooperation are greatly appreciated.

Published By
NEAVS
333 Washington Street, Suite 850
Boston, MA 02108-5100
(617) 523-6020

For more information about ESEC and alternatives to dissection, please contact:
Ethical Science Education Coalition • 167 Milk Street #423 • Boston, MA 02109-4315 • (617) 367-9143 • www.neavs.org/esec.html

We are not responsible for any typographical errors or price changes.

PRINTED IN CANADA

Introduction

It is said that change is the only universal constant. In the past 100 years, the changes human society has undergone are almost beyond imagination. Nowhere is this more dramatic than in the realm of science and technology. For example, sophisticated imaging technology has infiltrated business, entertainment, science, and medicine. In the field of education, teachers are faced with the formidable task of ensuring that their students are scientifically literate and are prepared to compete in a world very different from a generation ago.

In today's world, students are confronted with a society in which violence seems to run rampant. Regional and global environmental devastation secondary to human activity is contributing to species extinctions at frightening rates. To survive in this environment, the young people of today must not only have the educational resources to navigate competently in a complex world, but also the scaffolding necessary to make informed ethical and moral choices.

Biology teachers, or those that teach "the study of life," are in a unique position to integrate many of these issues in daily classroom activities. Exciting teaching aids can simultaneously develop computer literacy, promote environmental awareness, and encourage stimulating discussion about values and choices. Nowhere is this more evident than in the replacement of traditional dissections with technologically sophisticated learning tools.

Beyond Dissection was first published in 1992 to assist teachers in incorporating these tools into their science curricula. Due to overwhelming teacher demand, the *Beyond Dissection* booklet has grown over one hundred fold and has been distributed to over 20,000 educators world wide. Using this catalogue, today's biology teacher will have little difficulty in finding appropriate alternatives to provide challenging lessons, while at the same time meeting all the traditional objectives of dissection. By presenting these methods, we are offering viable and meaningful replacements to dissection, and in doing so, are glimpsing a broader, more holistic vision of the future of biology.

Table of Contents

WHOLE ANIMAL DISSECTION/VIVISECTION

Bird Dissection 1
Cat Dissection 1
Clam Dissection 3
Comparative Anatomy/Physiology 4
Crayfish Dissection 9
Dog Dissection 11
Earthworm Dissection 11
Fetal Pig Dissection 14
Frog Dissection 17
Grasshopper Dissection 23
Horse Dissection 24
Human Anatomy 24
Invertebrates – General 31
Perch Dissection 32
Rat Dissection 34
Shark Dissection 35
Starfish Dissection 36

ANIMAL ORGAN OR SYSTEM ANATOMY AND PHYSIOLOGY

Brain And Spinal Cord 37
Endocrinology 40
Gastrointestinal 40
Heart And Circulation 42
Kidney 50
Lungs 52
Multiple Animal Organs 54
Muscle And Nerve 57
Senses 61
Skeleton 65
Skin 68

OTHER

Animal Behavior 69
Biotechnology 70
Embryology 73
Innovative Teaching Tools 74
School Hatching Projects 77
Wonder & Respect 78

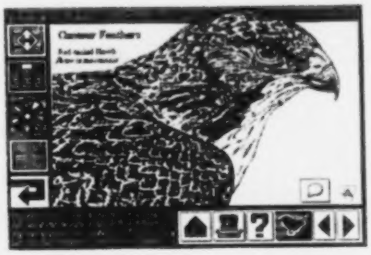
BIRD DISSECTION

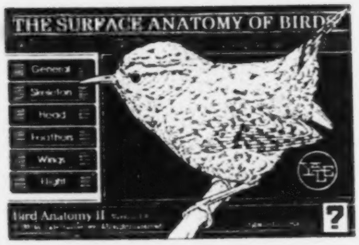
BIRD ANATOMY II

Yale Press
Tel: (1-800-YUPREAD)/203-432-0960

Multimedia Database
Price: $75.00

Bird Anatomy II is a multimedia database of anatomic graphics and descriptive text that works interactively with the bird volume of the Pioneer videodisc series "Encyclopedia of Animals". The stack explains complex anatomic information by linking bird anatomy to explanatory text and video segments of actual bird behavior in the field. This approach is particularly effective when applied to dynamic concepts such as flight, where detailed anatomic drawings of wing structures are linked to video segment showing birds in flight. Not only does this method explore the functional anatomy of the wing, but it also covers the various flight strategies.





Bird Anatomy II has won several design awards, and was named one of the top 200 Macintosh products by MacUser magazine in the December 1989 issue.

Computer Requirements:
Mac: 2MB RAM with hard drive
System 6.0.7 or higher
Hypercard 2.1

For technical information call Michelle Schrag at 203-432-7620.

Age Range: College

RAPTORS: BIRDS OF PREY

Ward's Biology
Tel: (800) 962-2660
Fax: (800) 635-8439

CD-ROM
Price: $49.00

This program presents a detailed study of fascinating birds of prey, such as eagles, hawks, kites, harriers, old world vultures, falcons, ospreys, and many more; a section on owls compares and contrasts their physical and social differences to the daytime raptors. The program features easy-to-read tests, hundreds of images by wildlife photographers, video clips, illustrations, animation, and audio clips of raptor calls from Cornell University's Library of Natural Sounds. You may select from 10 topics, including intro to raptor families, anatomy, origins, social behavior and interaction, the birds' senses, hunting methods, migration patterns, vocalization, impact of human activities on their environment, and environmental conservation.

Computer Requirements:
Mac: 68040 processor or better, System 7.0 or later, at least 8MB RAM

ATLAS OF CAT ANATOMY

Science Kit Boreal
Tel: (800) 828-7777

Book
Available for Loan
Price: $13.95

This book is an indispensable aid to the study of feline anatomy. The atlas features finely detailed photographs and large drawings for easy comprehension of the material covered.

Age Range: High School – College

CAT DISSECTION

CAT ANATOMY 35MM SLIDE SET

171-3304
Ward's Natural Science Establishment, Inc.
Tel: (800) 962-2660
Fax: (800) 635-8439

Slides
Available for Loan
Price: $125.00

This set of 50 slides clearly depicts the actual laboratory dissection of a cat. The skull, bones, muscles, thoracic and abdominal cavities, heart, lungs and trachea, spleen, stomach, intestines, urogenital system, and pelvic vessels and nerves are all included in this comprehensive study of the anatomy of the cat. Each slide has a corresponding reproducible chart with all important information clearly labeled. Developed by Charles R. Thomas, Ph.D. and Pamela Palmiter-Thomas, Ph.D., both of the University of Kansas Medical School, this product is fully capable of replacing cat dissection in the lab.

Age Range: High School – College

CAT ANATOMY SLIDES

S24956-1
Fisher-EMD
Tel: (800) 955-1177/(312) 378-7770
Fax: (312) 378-7174

Slides
Price: $249.00

Developed by Professor of Biology Michael J. Timmons, this set of 123 full color slides shows the sequential steps in dissection of the cat and is capable of replacing dissection in the lab. These photographs are of actual specimens at different stages of dissection, and all essential structures are clearly labeled. Unlabeled slides are included for practical exams, self-testing, review sessions or classroom discussion.

Age Range: High School – College

CAT DISSECTION

CAT DISSECTION CHART AND KEY CARD SETS

Boreal Biology
Tel: (800) 828-7777

Charts and key cards
Price: $24.40 charts, set of 8
Price: $5.20 key cards, set of 8

A set of eight classroom charts (43 x 55 cm) or key cards which detail the anatomy of the cat. Each set includes: The skeletal system, internal anatomy, the skeleton, superficial muscles, muscles of fore and hind limbs, arterial system, venous and lymph systems, urogenital system and nervous system.

Age Range: High School

CAT DISSECTION VIDEO

Ward's Biology
Tel: (800) 962-2660
Fax: (800) 635-8439

Video
Price: $69.95

This video shows each and every step of the dissection process and features full color close-up photography and a narrative that follows the organization of most basic laboratory manuals. Helpful graphics and pointers make it easier for students to identify anatomical structures, particularly those that may be difficult to locate in an actual specimen. This live action video includes a teacher's manual.

Age Range: High School

DISSECTION & ANATOMY OF THE CAT

S17618
Fisher-EMD
Tel: (800) 955-1177/(312) 378-7770
Fax: (312) 378-7174

Video 46.20 min.
Available as Set
Available Individually
Price: $195.19

You will have a powerful tool at your fingertips when you bring this educational videotape of an actual cat dissection into your classroom. This video is a versatile teaching aid and can be used as an alternative to an actual dissection.

The video presents students with a close-up view of the special procedures used for dissecting the cat. It graphically details the external anatomy of the cat. Then, proper dissection techniques are followed by a comprehensive review of the internal anatomy and physiology. A series of specific review questions is included.

Each video comes with a protective storage case.

Age Range: High School – College

DISSECTION VIDEO SERIES I – CAT

A5VH-1212
Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

Video w/Teacher's Guide 30 min. approx.
Available as Set
Available Individually
Available for Loan
Price: $70.00

This high quality video illustrates a start-to-finish dissection. Utilizing the most up-to-date equipment and techniques, the video follows every step of the dissection process. Following the organization of most lab manuals, this program can be used as a replacement for live animal dissection. Full-color close-ups correlate to a careful narrative to make it easy for students to follow along. Especially difficult-to-locate anatomical structures are identified by graphics and pointers. This program is accompanied by a printed script with numbered frame references and a complete glossary.

Age Range: Grades 7 – 12

DISSECTOGRAMS – CAT

C2198
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299
Fax: (303) 484-1198

Cards - Set of 4, 19" x 11"
Available as Set
Available Individually
Price: $19.90

Four large 19" x 11" laminated cards depict the relevant anatomical features of the cat. Students are guided step-by-step through the dissection process, reducing the frustration of misunderstanding and mistakes. This dissectogram depicts correct dissection procedures, necessary dissection tools, and proper scientific terminology. An exceptional aid for reviewing information, this product will dramatically improve students' zoology knowledge.

Age Range: Grades 7 – 12

LABORATORY ANATOMY OF THE CAT

S51351
Fisher-EMD
Tel: (800) 955-1177/(312) 378-7770
Fax: (312) 378-7174

Book
Price: $29.30

This manual, by Robert B. Chiasson and Ernest S. Booth, contains 62 pages with 49 drawings. It is printed in large format and spiral bound.

Age Range: High School – College

PREGNANT CAT MODEL ACTIVITY SET

Ward's Biology
Tel: (800) 962-2660
Fax: (800) 635-8439

Model
Price: $399.00

This one-piece, life-sized dissection model features over 100 individual anatomical details. You can study every major system for a complete overview of cat anatomy. A cross-

CLAM DISSECTION

sectioned kidney shows the cortex and medulla. Students will be able to trace major arteries and veins. An open uterus exposes a developing fetus. This model is so precise, even the open mouth cavity details the teeth and nasopharynx. Muscle groups of the fore and hind limb are also seen. Includes detailed illustration and key card copymaster which identifies all features. Actual size is 24"

Age Range: Grades 9-College

BIOLOGY CHART SERIES – CLAM

1888
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Chart
Available as Set
Available Individually
Price: $43.00/$48.00

The anatomy of this common mollusk is portrayed in a complete dissection. Separate figures detail the heart and other organs which include an enlarged glochidium and numerous glochidia attached to a fish.

To Order Single Charts:
Specify catalog number shown plus appropriate suffix to indicate your choice of mounting option.

For Single Charts with Hang-up Mount:
Add suffix (-10) to catalog number. Chart is mounted with rods top and bottom with loops for hanging. $49.00 each.

For Single Charts with Spring Roller Mount:
Add suffix (-14) to catalog number. Chart is mounted with individual spring roller attached to steel backboard. $64.00 each.

Age Range: Grades 7 – 12

BIOLOGY DISSECTIONS – CLAM DISSECTION

Cross Educational Software
Tel: (800) 768-1969/(318) 255-8921

Computer Program
Available as Set
Available Individually
Price: $29.95

This dissection guide was written and classroom tested by a high school teacher. The software is fully capable of replacing animal dissection in the classroom.

The program has 15 to 30 pictures and can be used several ways. It teaches vocabulary by giving the definitions and functions of the body structures together with pictures. It can go through a step-by-step dissection with all the safety warnings and techniques. It can also be used for self-testing. Approximately 50 to 100 questions are included with the dissection guide: true-false, multiple choice, and matching the organ names with pictures.

The Apple version is copy-protected with a free back-up disk included. 5 1/4 inch disks are standard unless otherwise requested.

The IBM/Tandy version requires CGA or better graphics. Both large and small disks are included in the package.

The Macintosh program will display color if you have it.

Computer Requirements:
Apple (CR-095): 48K
IBM (CR-134): 512K
Mac (CR-215): 1MB

Age Range: High School

CLAM ANATOMY

Ward's Biology
Tel: (800) 962-2660
Fax: (800) 635-8439

Model
Price: $210.00

This enlarged dissection model will be a joy to use for teaching the internal anatomy of a clam because it is colorful and large enough to clearly show intricate detail. The model is keyed with 53 different structures for extra clarification. It measures 15" x 8" and is mounted on a base.

Age Range: Grades 7 – 12

CLAM MODEL ACTIVITY SET

C2755
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Model, Guide, Color Transparency
Available as Set
Available Individually
Price: $89.25

Introduce your students to anatomy with this model shown in raised relief. Each model illustrates internal structures in graphic detail and is capable of replacing the use of animal specimens in the classroom.

This unique model illustrates the exaggerated perspective of a mollusk gill structure as well as a cut-away section of the shell, foot and mantle to reveal the internal organs.

Two separate inset diagrams also show the circulatory and nervous system.

Activity set includes a 24" W x 18" H raised relief model, detailed activity guide and color transparency.

Age Range: Grades 7 – 12

DISSECTION VIDEO SERIES II – CLAM

A5VH-1220
Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

Video w/Teacher's Guide 8 min.
Available as Set
Available Individually
Price: $100.00

Capable of replacing dissection labs, this program provides a clear and detailed presentation of the external anatomy of the specimen, the correct procedures used for dissection, and a review of the internal anatomy and physiological systems. The video is accompanied by a dissection manual and a written examination.

Age Range: Grades 7 – 12

DISSECTOGRAMS – CLAM

C2195
Hubbard Scientific
Tel: (715) 723-4427/(800)289-9299

Cards - Set of 4, 19" x 11"
Available as Set
Available Individually
Price: $19.90

CLAM DISSECTION

COMPARATIVE ANATOMY / PHYSIOLOGY

Four large 19" x 11" laminated cards depict the relevant anatomic features of the clam. Students are guided step-by-step through the dissection process, reducing the frustration of misunderstanding and mistakes. This Dissectogram can also be used in combination with Hubbard's three-dimensional zoology models in lieu of using animal specimens. It depicts correct dissection procedures, necessary dissection tools, and proper scientific terminology. An exceptional aid for reviewing information, this product will dramatically improve your students' zoology knowledge.

Age Range: Grades 7 – 12

THE CONCISE CLAM DISSECTION CHART

BioCam Communications, Inc.
Tel: (800) 667-3316
Fax: (800) 668-2279

Chart
Available as Set
Available Individually
Price: $4.50

This 8 1/2" x 11" chart uses high quality photography and microphotography to depict the complete dissection of the clam. It is printed on both sides of stiff card stock. A plastic sleeve is provided for protection when not in use.

The price is reduced to $3.95 each when ordering 10 or more in any combination.

In Alaska, call collect at (604) 768-4242, or fax at (604) 768-7679.

Age Range: Grades 7 – 12

ANATOMY AND DISSECTION

Films for the Humanities and Sciences
Tel: (800) 257-5126
Fax: (609) 275-3767

Videos
Available Individually
Price:
$149.00 each – Frog, Fetal Pig, Shark
Rental: $75.00 each

$149.00 each – Freshwater Mussel, Crayfish, Perch, Earthworm, Grasshopper
Rental: $89.95 each

This group of programs is designed to educate students about the organs and body systems of various animals. In each program, the animal is dissected to clearly illustrate the functions of all of its body systems. The programs can be used to show students how to dissect or can be shown to a class in lieu of group or individual dissection.

Age Range: Grades 7 – 12

BIO-LOGICAL MODELS

National Teaching Aids
Tel: (516) 326-2555

Models
Available for Loan
Price: $270.00 each

These unique models are two-dimensional anatomy charts with removable organs made of pure vinyl. Each model's parts are clearly numbered and correspond to informative instructional key cards. Extremely popular with teachers and students alike, Bio-LOGICAL Models provide excellent comparative studies of human and frog anatomy. The ease with which this "dissection" can be repeated makes it perfect for beginning students.

Bio-LOGICAL Models are available for Earthworm, Frog, and Human studies.

Age Range: Grades 7 – 12

BIOLOGICAL DISSECTION (COMPLETE SET)

LCL420 - CV
Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

2 Videos w/Teacher's Guides 34 min. avg.
Available as Set
Available Individually
Price: $70.00 each/$130.00 set

Excellent supplements to textbook descriptions of dissection, these programs will provide your students with all the information they need. Both videos focus on the exploration of the organism in the context of its environment without sacrificing the detail necessary to get the most out of this method of teaching physiology.

Part 1:
Introduction to Dissection
The Earthworm
The Crayfish

Part 2:
The Perch
The Frog, Part I
The Frog, Part II

Part 1 — LCL-420-1CV
Part 2 — LCL-420-2CV

Age Range: Grade 12

BIOLOGY DISSECTIONS – SET OF SEVEN

Cross Educational Software
Tel: (800) 768-1969/(318) 255-8921

Computer Programs — Set of 7
Available as Set
Available Individually
Price: $190.00

These dissection guides were written and classroom tested by a high school teacher. The software is fully capable of replacing animal dissection in the classroom.

Each program has 15 to 30 pictures and can be used several ways. It teaches vocabulary by giving the definitions and functions of the body structures together with pictures. It can go through a step-by-step dissection with all the safety warnings and techniques. It can also be used for self-testing. Approximately 50 to 100 questions are included with each dissection guide: true-false, multiple choice, and matching the organ names with pictures.

The set includes the following programs:

- Frog Dissection
- Earthworm Dissection
- Grasshopper Dissection
- Crayfish Dissection
- Clam Dissection
- Perch Dissection
- Starfish Dissection

The Apple versions are copy-protected with a free back-up disk included. 5 1/4 inch disks are standard unless otherwise requested.

The IBM/Tandy versions require CGA or better graphics. Both large and small disks are included in the package.

COMPARATIVE ANATOMY / PHYSIOLOGY

The Macintosh programs will display color if you have it.

Computer Requirements:
Apple (CR-089): 48K
IBM (CR-138): 512K
Mac (CR-217): 1MB

Age Range: High School

BIOLOGY LABORATORY SERIES (COMPLETE SET)

5CHF-1133A
Intellimation
Tel: (800) 346-8355/(805) 968-2291
Fax: (805) 968-8899

Computer Program
Available as Set
Available Individually (some)
Price: $39.00 each/$345.00 set

A 14-program lab tutorial series
Philip Stephens, Villanova University

A HyperCard series for independent study, this tutorial contains 14 programs exploring a variety of biology topics including potentials, specific animal anatomy and structure, and more. Text and animation illustrate and demonstrate the principles of each topic. Each program contains a lab exercise that is divided into six sections: background, equipment, methods, data analysis, references, and questions.

The following programs are included:
Cockroach Nerve Cord, Crab Ion Balance, Crayfish Membrane Potential Lab, Effect of Size on Mouse Metabolism, Frog Gastrocnemius Muscle, Frog Heart, Frog Sciatic Nerve, Human Electrocardiogram, Human Lung, Postsynaptic Potentials in Crab Stretcher Muscle, Postsynaptic Potentials Lab, Rat Uterus Smooth Muscle Lab, Mouse Thyroid Gland, and Water and Ion Movement Across Frog Skin.

Computer Requirements:
Mac: 1MB RAM or higher
System 6.0.5 or higher
HyperCard 2.0 or higher
System 7 compatible

Site license for this series: 5CHF-1133C $1,169.00

Age Range: College

BIOLOGY TOPICS – ANIMALS I, II AND III

William K. Bradford Publishing Co.
Tel: (800) 421-2009
Fax: (508) 263-9375

Computer Program
Price: $45.00 each (see below)

These three highly visual and stimulating tutorials offer self-paced, individualized learning opportunities, and will help high school level students increase their biology knowledge and problem-solving skills. Full of detailed, accurate illustrations, these programs also provide instruction through text and figures. All three come complete with diagnostic self-tests and include a substantial number of question types (fill-in, multiple choice, matching, labeling, pairing, and vocabulary). They also include simulated experiments. Developed to work together, each tutorial focuses on specific areas secondary school biology.

Computer Requirements:
Mac: 2MB RAM or higher

Animals I — Diversity of Animals, The Porifera, The Coelenterates, Worms.
Single copy: BTA1 $45.00 (school price)
Lab Pack (10): BTA1L $180.00 (school price)
Site license: BTA1N $270.00 (school price)

Animals II — The Mollusks, The Echinoderms, The Arthropods, The Insects, The Chordata and Vertebrata.
Single copy: BTA2 $45.00 (school price)
Lab Pack (10): BTA2L $180.00 (school price)
Site license: BTA2N $270.00 (school price)

Animals III — Fish and Amphibia, Reptiles and Birds, Mammals.
Single copy: BTA3 $45.00 (school price)
Lab Pack (10): BTA3L $180.00 (school price)
Site license: BTA3N $270.00 (school price)

Age Range: Grades 9 – 12

CLASSIFYING ANIMALS WITH BACKBONES/ CLASSIFYING ANIMALS WITHOUT BACKBONES

William K. Bradford Publishing Co.
Tel: (800) 421-2009
Fax: (508) 263-9375

Computer Programs
Available for Loan
Price: $72.00 each (see below)

These are two separate programs that work together to explore the external anatomy of vertebrates and invertebrates. These game-oriented programs lead students through the process of classifying animals according to their structure, life cycles, habits, and habitats. Notekeeping, worksheets, a glossary, and visual "portraits" help students with their task.

Classifying Animals With Backbones
(Apple Min. Req. 48K)
Single copy: ANWB $51.00 (school price)
Lab Pack (10): ANWBL $153.00 (school price)
Site license: ANWBN $204.00 (school price)

Classifying Animals Without Backbones
Single copy: ANNB $51.00 (school price)
Lab Pack (10): ANNBL $153.00 (school price)
Site license: ANNBN $204.00 (school price)

Age Range: Grades 4 - 6

DISSECTION & ANATOMY VIDEO TAPES – SERIES

Fisher-EMD
Tel: (800) 955-1177/(312) 378-7770
Fax: (312) 378-7174

Videos
Price: $155.00-$214.00 each

You will have a powerful tool at your fingertips when you bring these educational videotapes of actual animal dissections into your classroom. These videos are versatile teaching aids and can be used as alternatives to actual dissections.

This complete series presents students with a close-up view of the special dissection procedures used for each particular specimen. Each video graphically details the

COMPARATIVE ANATOMY / PHYSIOLOGY

external anatomy of the specimen. Proper dissection techniques are followed by a comprehensive review of the internal anatomy and physiology. A series of specific review questions is included with each video.

S17618 — Dissection & Anatomy of the Cat (46:20) - $214.00
S17618A — Dissection & Anatomy of the Clam (7:41) - $155.00
S17618C — Dissection & Anatomy of the Earthworm (10:06) - $155.00
S17618D — Dissection & Anatomy of the Fetal Pig (25:26) - $167.00
S17618E — Dissection & Anatomy of the Frog (20:50) - $167.00
S17618F — Dissection & Anatomy of the Grasshopper (8:24) - $168.00
S17618G — Dissection & Anatomy of the Perch (12:45) - $155.00
S17618H — Dissection & Anatomy of the Rat (30:31) - $167.00
S17618I — Dissection & Anatomy of the Shark (25:34) - $169.95

Each video comes with a protective storage case.

Age Range: High School – College

DISSECTION VIDEO SERIES I (COMPLETE SET)

85VH-1218
Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

Videos w/Teacher's Guides Avg. 30 min. ea.
Available as Set
Available Individually
Price: $400.00 for set/$70.00 each

These high quality videos illustrate the start-to-finish dissections of several standard lab study animals. Utilizing the most up-to-date equipment and techniques, the videos follow every step of the dissection process. Following the organization of most lab manuals, these programs can be used as replacements for live animal dissections. Full-color close-ups correlate to a careful narrative to make it easy for students to follow along. Especially difficult-to-locate anatomical structures are identified by graphics and pointers. These programs are accompanied by printed scripts with numbered frame references and a complete glossary.

The set includes the following videos:
Earthworm Dissection
Frog Dissection
Fetal Pig Dissection
Cat Dissection
Starfish Dissection
Crayfish Dissection

Age Range: Grades 7 – 12

DISSECTION VIDEO SERIES II (COMPLETE SET)

L5VH-1227
Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

Videos w/Teacher's Guides 140 min. total
Available as Set
Available Individually
Price: $950.00

Capable of replacing dissection labs, these programs provide clear and detailed presentations of the external anatomy of each specimen, the correct procedures used for dissection, and a review of the internal anatomy and physiological systems. Each video is accompanied by a dissection manual and a written examination.

The set includes the following videos:
Shark Dissection — 26 min. — $160.00
Perch Dissection — 13 min. — $100.00
Rat Dissection — 31 min. — $160.00
Grasshopper Dissection — 9 min. — $100.00
Clam Dissection — 8 min. — $100.00
Sheep Brain Dissection — 22 min. — $150.00
Beef Eye Dissection — 16 min. — $150.00
Pig Heart Dissection — 15 min. — $150.00

Age Range: Grades 7 – 12

DISSECTOGRAMS (COMPLETE SET)

C2189
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Cards - 32, 19" x 11"
Available as Set
Available Individually
Price: $19.90 each/$136.50 set

Thirty-two large 19" x 11" laminated cards (eight sets of four cards) depict the relevant anatomic features of eight standard lab study animals. Students are guided step-by-step through the dissection process, reducing the frustration of misunderstanding and mistakes. These Dissectograms can also be used in combination with Hubbard's three-dimensional zoology models in lieu of using animal specimens. They depict correct dissection procedures, necessary dissection tools, and proper scientific terminology. Exceptional aids for reviewing information, these products will dramatically improve your students' zoology knowledge.

The set includes the following Dissectograms:
Frog, Crayfish, Perch, Clam, Earthworm, Fetal Pig, Grasshopper, Cat

Age Range: High School – College

INVERTEBRATES

C1660
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Transparencies
Price: $115.50

Explore the specific characteristics of the ten invertebrate phyla with these 12 full-color transparencies. Topics include: Amoeba, Paramecium, Coelenterates, Mollusks, Ant Colony, Water Anthropods, Insect Collecting, and more.

Age Range: Grades 7 – 12

LEARNING ALL ABOUT DISSECTION

Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

Computer Program/CD-ROM
Price: $100.00

Don't let lack of funding, time, limitations, safety, or philosophical issues compromise your students' anatomy education. You can

COMPARATIVE ANATOMY / PHYSIOLOGY

use this fantastic program to replace actual laboratory dissections. It thoroughly addresses environment, adaptations, and anatomy of the organisms by focusing on their physiology rather than on dissection techniques. Vivid color photographs of dissected and undissected animals, as well as the animals in their habitats, are accompanied by a clear narration to help define and explain dissection as a carefully-performed investigation of an organism's anatomy. You will probably find that your students will learn more by using this program than they would after completing an actual dissection.

Included are in-depth studies of the earthworm, crayfish, perch, frog, and fetal pig, which examine the sense organs, brain, appendages, means of locomotion, digestion, circulation, and reproduction of each.

This excellent program contains an optional feature for quizzing your students as they use it; a Class Manager function allows you to maintain their scores and completion times. The disc also includes extensive teaching materials.

Computer Requirements:
Mac: 2MB RAM or higher, color monitor required
IBM: MCGA or VGA required, sound play (optional) requires Sound Blaster or compatible card.

L3CD 4015M Macintosh
L3CD 4015B IBM (MS-DOS)

Age Range: Grades 4 – 12

LIFE SCIENCE TOPICS – ANIMALS

William K. Bradford Publishing Co.
Tel: (800) 421-2009
Fax: (508) 263-9375

Computer Program
Price: $45.00 each (see below)

This highly visual and stimulating tutorial will help students work on their life science knowledge and problem-solving skills. Full of detailed, accurate illustrations and simple, engaging animations, this program also comes complete with a diagnostic self-test and includes a substantial number of question types (fill-in, multiple choice, matching, labeling, pairing, and vocabulary). This tutorial, Animals, focuses on both simple and complex invertebrates and vertebrates.

Computer Requirements:
Mac: 2MB RAM or higher
IBM: PC or 100% compatible, 512K or higher, MS-DOS

Single copy: LSAN $45.00 (school price)
Lab Pack (10): LSANL $180.00 (school price)
Site license: LSANN $270.00 (school price)

Age Range: Grades 6 – 9

MARINE INVERTEBRATES

Ventura Educational Systems
Tel: (800) 336-1022
Fax: (805) 473-7382

Computer Program
Price: $59.95

This interesting program presents information on the sponge, sea anemone, clam and starfish. Students learn about the basic biological processes that enable these simple animals to survive.

The program provides graphically illustrated lessons that present basic information on the topic. It contains a database of structures and functions linked to the graphic that allows students to investigate the parts of the animals, and to retrieve detailed information about the biological function of a particular structure.

Word games in the program are designed to help students learn to identify anatomical structures and associated biological functions, and to learn the special vocabulary that pertains to marine biology.

The program also presents a series of quizzes that generate multiple choice and true/false questions based on the lessons. This permits students to self-test and reinforces learned material.

A teacher's guide with worksheets that support the computer-based activities is included.

MacINVERTEBRATE

Intellimation
Tel: (800) 346-8355
Fax: (805) 968-8899

Computer Program
Price: $59.00

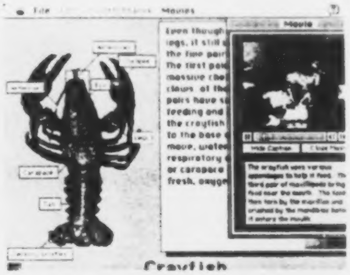
Site License: $269.00

Bob Doltar, Portland State University

Your students will dissect three common phyla of invertebrates on-screen: The earthworm, sea star, and crayfish.

MacInvertebrate:

- Includes a detailed, illustrated table comparing and contrasting the animals' systems
- Gives students an understanding of the similarities and differences between these common invertebrates
- Compares the digestive, respiratory, reproductive, nervous, circulatory, skeletal, and excretory systems



In addition, key vocabulary words are highlighted and their definitions may be accessed instantly. A final, comprehensive test is included after the lab is completed. An excellent pre-lab introduction is included.

Computer Requirements:
Mac: Min. RAM: 2MB, Min. System: 6.0.7, color or grayscale monitor, Other: QuickTime optional

Age Range: Grades 7 – 12

COMPARATIVE ANATOMY / PHYSIOLOGY

TECHNOLOGICAL DISSECTIONS: THE SERIES

Science Works, Inc.
Tel: (910) 712-0353

Computer Program
Price: $95.95 each

Finally, a truly workable alternative to animal dissection that goes way beyond supplementary pre-or post-lab use. This new and exciting series was developed by four master science teachers. Using cutting-edge technology, digitized photographs of real animals will enable your students to electronically "dissect" the specimen right on the computer.

In classroom tests across the U.S.A. and Canada, students and teachers alike have praised this software for its accuracy and ease of use. It is without equal in reinforcing student learning and observation in a way that lab work cannot — students can work at their own pace, they can make up for missed classes, and the dissections can be repeated as many times as necessary, all at no additional cost! And, it is without the inherent dangers and discomforts associated with the cutting and handling of actual animal specimens.

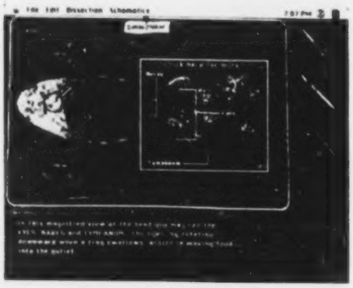
This series is a time-saver, a cost-saver, and has outstanding potential as a learning tool in any school teaching biology, anatomy, or the life sciences.

The Series includes:
The Crayfish: A Technological Dissection

Computer Requirements:
Mac: LC or higher — 1MB RAM
Apple: 2E or higher — 64K/128K for
ProDOS version
IBM: PC or 100% compatible
512K w/CGA graphics

Lab Pack (5 sets): $109.95
Lab Pack (10 sets): $159.95
Network (30 Stations): $359.95

Age Range: Grade 7 and higher



The Earthworm: A Technological Dissection
The Fetal Pig: A Technological Dissection
The Frog: A Technological Dissection
The Perch: A Technological Dissection
The Cat: A Technological Dissection

Each module contains two disks that are duplicatable for backup. Special combination packages and network versions are available at significant savings.

Computer Requirements:
Mac: 4MB RAM or higher, with hard drive
System 6.0.7 or higher
Color monitor
System 7 compatible
IBM: PC or 100% compatible
640K RAM
DOS 3.3 or higher
MCGA graphics
Mouse

CD: $59.95 ea. or $199.95 series

Age Range: High School – College

SYSTEMS OF THE HUMAN BODY (COMPLETE SET)

C2613
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Models
Available as Set
Available Individually
Price: $81.50 each/$446.25 set

Colorful 3-D models illustrate the six major systems of the human body! Each Model Activity Set consists of a markable model of durable vinyl and a Model Activity Guide which includes background information, basic understandings, activities, a glossary and a key to model structures. Full-color transparencies and a Black Line diagram master of the model are also included in each Activity Set.

The master set includes the following systems:
Circulatory, Nervous, Respiratory, Urinary, Digestive, Endocrine

Age Range: Grades 7 – 12

THE ZOOLOGY COLORING BOOK

5114
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Book
Price: $16.00

Proven effective, this book is designed for learning by doing. Its central theme is the correlation of functional systems among all animals — invertebrate and vertebrate. It contains 107 pages of beautifully rendered illustrations, each paired with a full page of concise instructional text linked to the illustration. Important specimens such as the frog and the fetal pig are given in-depth coverage.

This book comes complete with comprehensive subject index. It is 240 pages, soft bound, and measures 8 x 11 inches.

Age Range: High School – College

VERTEBRATES

C1665
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Transparencies
Price: $162.75

How are warm-blooded vertebrates different from cold-blooded ones? Help your students understand these differences with this set of 12 transparencies. Topics include: Fish, Vertebrate Animals, Mammal Structure, Bird Structure, Bird Embryology, and much more.

Age Range: Grades 7 – 12

COMPARATIVE ANATOMY / PHYSIOLOGY

CRAYFISH DISSECTION

ZOOLOGY MODELS ACTIVITY SET (COMPLETE SET OF 7)

C2758
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Model, Guide, Color Transparency
Available as Set
Available Individually
Price: $81.50 each/$525.00 set

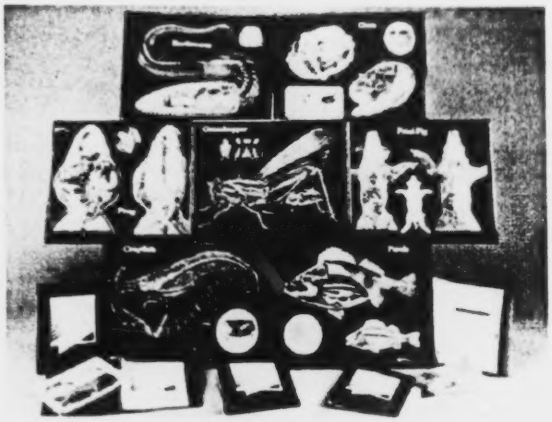
Introduce your students to anatomy with seven dissection models shown in raised relief. Each model illustrates internal structures in graphic detail and is capable of replacing the use of animal specimens in the classroom. All models are 18" H x 24" W and are accompanied by a comprehensive activity guide and color transparencies.

Clam
This unique model illustrates the exaggerated perspective of a mollusk gill structure as well as a cut-away section of the shell, foot and mantle to reveal the internal organs. Two separate inset diagrams also show the circulatory and nervous system.

Crayfish
A commonly dissected invertebrate, the crayfish is shown in 3-D so learners can study the organs and structure of an animal with an exoskeleton. Colorful model illustrates the special adaptations the crayfish has for life under water with an inset of the gill structure.

Earthworm
Classical relief of the anterior portion of the earthworm shows the internal organs and systems representative of primitive invertebrates. Model clearly illustrates the body in cross section and enhances or replaces the use of animal specimens in the classroom.

Fetal Pig
This model illustrates a dissected portion of the abdominal and thoracic organs. The male reproductive system is shown ventrally and a dorsal view allows examination of the female reproductive organs, as well as the brain, muscles and nervous system. An inset diagram also outlines the circulatory system.



Frog
The anatomy of all frog organs and systems is presented in ventral and dorsal dissected views. The abdominal organs are reflected to expose a representation of the female reproductive organs from the left and the male is shown from the right. A separate inset details the structure of a frog's three-chambered heart.

Grasshopper
Representational of insects, this model shows the wing and has a portion of the exoskeleton cut away to reveal the internal organs. The often studied mouth is shown in a separate inset, illustrating the frontal view of the head as well as dissected in magnified detail.

Perch
Students can view the special adaptations of an aquatic vertebrate for exchanging oxygen and carbon dioxide. All organ systems are graphically illustrated in 3-D; plus two inset diagrams of gas exchange in the gills and the complete skeletal system.

Age Range: Grades 8 – 12

BIOLOGY CHART SERIES – CRAYFISH

1885
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Chart
Available as Set
Available Individually
Price: $49.00/$64.00

The central figure portrays an entire male specimen dissected to reveal internal as well as external anatomy. Separate views include the female abdomen with eggs and young, the heart, and the modified appendages which comprise the mouthparts.

To Order Single Charts:
Specify catalog number shown plus appropriate suffix to indicate your choice of mounting option.

For Single Charts with Hang-up Mount:
Add suffix (-10) to catalog number. Chart is mounted with rods top and bottom with loops for hanging. $49.00 each.

For Single Charts with Spring Roller Mount:
Add suffix (-14) to catalog number. Chart is mounted with individual spring roller attached to steel backboard. $64.00 each.

Age Range: Grades 7 – 12

CRAYFISH DISSECTION

BIOLOGY DISSECTIONS – CRAYFISH

Cross Educational Software
Tel: (800) 768-1969/(318) 255-8921

Computer Program
Available as Set
Available Individually
Price: $29.95

This dissection guide was written and classroom tested by a high school teacher. The software is fully capable of replacing animal dissection in the classroom.

The program has 15 to 30 pictures and can be used several ways. It teaches vocabulary by giving the definitions and functions of the body structures together with pictures. It can go through a step-by-step dissection with all the safety warnings and techniques. It can also be used for self-testing. Approximately 50 to 100 questions are included with the dissection guide: true-false, multiple choice, and matching the organ names with pictures.

The Apple version is copy-protected with a free back-up disk included. 5 1/4 inch disks are standard unless otherwise requested.

The IBM/Tandy version requires CGA or better graphics. Both large and small disks are included in the package.

The Macintosh program will display color if you have it.

Computer Requirements:
Apple (CR-094): 48K
IBM (CR-136): 512K
Mac (CR-213): 1MB

Age Range: Grades 7 – 12

CRAYFISH

Ward's Biology
Tel: (800) 962-2660
Fax: (800) 635-8439

Model
Price: $375.00

Give your class the opportunity to actually see the inner workings of a crayfish and study it in depth. This model will show them a longitudinal as well as a cross-section of a crayfish. The two sections are mounted on a 30" x 12" wooden base. An informative manual is included.

Age Range: Grades 7 – 12

CRAYFISH MODEL ACTIVITY SET

C2752
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Model, Guide, Color Transparency
Available as Set
Available Individually
Available for Loan
Price: $89.25

Introduce your students to anatomy with this model shown in raised relief. Each model illustrates internal structures in graphic detail and is capable of replacing the use of animal specimens in the classroom.

A commonly dissected invertebrate, the crayfish is shown in 3-D so learners can study the organs and structure of an animal with an exoskeleton. Colorful model illustrates the special adaptations the crayfish has for life under water with an inset of the gill structure.

Activity set includes a 24" W x 18" H raised relief model, detailed activity guide and color transparency.

Age Range: Grades 8 – 12

DISSECTION & ANATOMY OF THE CRAYFISH

S17618B
Fisher-EMD
Tel: (800) 955-1177/(312) 378-7770
Fax: (312) 378-7174

Video 14:30 min
Available as Set
Available Individually
Price: $155.00

You will have a powerful tool at your fingertips when you bring this educational videotape of an actual crayfish dissection into your classroom. This video is a versatile teaching aid and can be used as an alternative to an actual dissection.

The video presents students with a close-up view of the special procedures used for dissecting the crayfish. It graphically details the external anatomy of the crayfish. Then, proper dissection techniques are followed by a comprehensive review of the internal anatomy and physiology. A series of specific review questions is included.

Each video comes with a protective storage case.

Age Range: High School – College

DISSECTION VIDEO SERIES I - CRAYFISH

A5VH-1213
Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

Video w/Teacher's Guide 30 min. approx.
Available as Set
Available Individually
Available for Loan
Price: $70.00

This high quality video illustrates a start-to-finish dissection. Utilizing the most up-to-date equipment and techniques, the video follows every step of the dissection process. Following the organization of most lab manuals, this program can be used as a replacement for live animal dissection. Full-color close-ups correlate to a careful narrative to make it easy for students to follow along. Especially difficult-to-locate anatomical structures are identified by graphics and pointers. This program is accompanied by a printed script with numbered frame references and a complete glossary.

Age Range: Grades 7 – 12

DISSECTOGRAMS – CRAYFISH

C2192
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Cards - Set of 4, 19" x 11"
Available as Set
Available Individually
Price: $19.90

Four large 19" x 11" laminated cards depict the relevant anatomic features of the cray-

CRAYFISH DISSECTION

DOG DISSECTION

EARTHWORM DISSECTION

fish. Students are guided step-by-step through the dissection process, reducing the frustration of misunderstanding and mistakes. This Dissectogram can also be used in combination with Hubbard's three-dimensional zoology models in lieu of using animal specimens. It depicts correct dissection procedures, necessary dissection tools, and proper scientific terminology. An exceptional aid for reviewing information, this product will dramatically improve your students' zoology knowledge.

Age Range: High School – College

THE CONCISE CRAYFISH DISSECTION CHART

BioCam Communications, Inc.
Tel: (800) 667-3316
Fax: (800) 668-2279

Chart
Available as Set
Available Individually
Price: $4.50

This 8 1/2" x 11" chart uses high quality photography and microphotography to depict the complete dissection of the crayfish. It is printed on both sides of stiff card stock. A plastic sleeve is provided for protection when not in use.

The price is reduced to $3.95 each when ordering 10 or more in any combination.

In Alaska, call collect at (604) 768-4242, or fax at (604) 768-7679.

Age Range: Grades 7 – 12

THE CRAYFISH: A TECHNOLOGICAL DISSECTION

Science Works, Inc.
Tel: (910) 712-0353

Computer Program
Price: $99.95
$59.95 CD/$199.95 CD series

Finally, a truly workable alternative to animal dissection that goes way beyond supplementary pre- or post-lab use. This new and exciting program was developed by four master science teachers. Using cutting-edge technology, digitized photographs of real animals will enable your students to electronically "dissect" the specimen right on the computer.

In classroom tests across the U.S.A. and Canada, students and teachers alike have praised this software for its accuracy and ease of use. It is without equal in reinforcing student learning and observation in a way that lab work cannot — students can work at their own pace, they can make up for missed classes, and the dissection can be repeated as many times as necessary, all at no additional cost! And, it is without the inherent dangers and discomforts associated with the cutting and handling of actual animal specimens.

This program is a time-saver, a cost-saver, and has outstanding potential as a learning tool in any school teaching biology, anatomy, or the life sciences.

This module contains two disks that are duplicatable for backup, and is available separately or as part of a series. Special combination packages and network versions are available at significant savings.

Computer Requirements:
Mac: 4MB RAM or higher, with hard drive
System 6.0.7 or higher
Color monitor
System 7 compatible
IBM: PC or 100% compatible
640K RAM
DOS 3.3 or higher
MCGA graphics
Mouse

Age Range: High School – College

THE VISIBLE DOG KIT

Anatomical Chart Company
Tel: (800) 621-7500
Fax: (847) 674-0211

Model
Price: $16.95

Build this model of a purebred dog and instantly your students will become experts in canine anatomy. This kit features 59 parts representing the structures of the skeleton and vital organs. The model measures 8 1/2" tall x 9 1/4" long. Includes assembly instructions.

Age Range: Grades 5 – 12

BIO-LOGICAL MODELS – EARTHWORM ANATOMY

National Teaching Aids
Tel: (516) 326-2555

Model
Available for Loan
Price: $270.00

This unique model is a two-dimensional anatomy chart with removable organs made of pure vinyl. The model's parts are clearly numbered and correspond to an informative instructional key card. Extremely popular with teachers and students alike, this Bio-LOGICAL Model provides an excellent opportunity to study earthworm anatomy. The ease with which this "dissection" can be repeated makes it perfect for beginning students.

Bio-LOGICAL Models are also available for Frog and Human studies.

Age Range: Grades 7 – 12

BIOLOGY CHART SERIES – EARTHWORM

1884
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Chart
Available as Set
Available Individually
Price: $49.00/$64.00

Depicting the anatomy of this common annelid through cutaway views, separate figures detail the reproductive and excretory systems. Also portrayed is a habit study.

To Order Single Charts:
Specify catalog number shown plus appropriate suffix to indicate your choice of mounting option.

For Single Charts with Hang-up Mount:
Add suffix (-10) to catalog number. Chart is mounted with rods top and bottom with loops for hanging. $49.00 each.

EARTHWORM DISSECTION

For Single Charts with Spring Roller Mount: Add suffix (-14) to catalog number. Chart is mounted with individual spring roller attached to steel backboard. $64.00 each.

Age Range: Grades 7 – 12

BIOLOGY DISSECTIONS – EARTHWORM

Cross Educational Software
Tel: (800) 768-1969/(318) 255-8921

Computer Program
Available as Set
Available Individually
Available for Loan
Price: $29.95

This dissection guide was written and classroom tested by a high school teacher. The software is fully capable of replacing animal dissection in the classroom.

The program has 15 to 30 pictures and can be used several ways. It teaches vocabulary by giving the definitions and functions of the body structures together with pictures. It can go through a step-by-step dissection with all the safety warnings and techniques. It can also be used for self-testing. Approximately 50 to 100 questions are included with the dissection guide: true-false, multiple choice, and matching the organ names with pictures.

The Apple version is copy-protected with a free back-up disk included. 5 1/4 inch disks are standard unless otherwise requested.

The IBM/Tandy version requires CGA or better graphics. Both large and small disks are included in the package.

The Macintosh program will display color if you have it.

Computer Requirements:
Apple (CR-092): 48K
IBM (CR-132): 512K
Mac (CR-211): 1MB

Age Range: Grades 7 – 12

DISSECTION VIDEO: EARTHWORM

Ward's Biology
Tel: (800) 962-2660
Fax: (800) 635-8439

Video 13 min
Price: $69.95

This video shows each and every step of the dissection process from start to finish using the most up-to-date equipment and techniques. This 13-minute live-action video includes teacher's manual.

Age Range: Grades 7 – 12

DISSECTION & ANATOMY OF THE EARTHWORM

S17618C
Fisher-EMD
Tel: (800) 955-1177/(312) 378-7770
Fax: (312) 378-7174

Video 10:06 min.
Available as Set
Available Individually
Price: $155.00

You will have a powerful tool at your fingertips when you bring this educational videotape of an actual earthworm dissection into your classroom. This video is a versatile teaching aid and can be used as an alternative to an actual dissection.

The video presents students with a close-up view of the special procedures used for dissecting the earthworm. It graphically details the external anatomy of the earthworm. Then, proper dissection techniques are followed by a comprehensive review of the internal anatomy and physiology. A series of specific review questions is included.

Each video comes with a protective storage case.

Age Range: High School – College

DISSECTION VIDEO SERIES I – EARTHWORM

A5VH-1214
Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

Video w/Teacher's Guide 30 min. approx.
Available as Set
Available Individually
Price: $70.00

This high quality video illustrates a start-to-finish dissection. Utilizing the most up-to-date equipment and techniques, the video follows every step of the dissection process. Following the organization of most lab manuals, this program can be used as a replacement for live animal dissection. Full-color close-ups correlate to a careful narrative to make it easy for students to follow along. Especially difficult-to-locate anatomical structures are identified by graphics and pointers. This program is accompanied by a printed script with numbered frame references and a complete glossary.

Age Range: Grades 7 – 12

DISSECTOGRAMS – EARTHWORM

C2196
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Cards - Set of 4, 19" x 11"
Available as Set
Available Individually
Price: $19.90

Four large 19" x 11" laminated cards depict the relevant anatomic features of the earthworm. Students are guided step-by-step through the dissection process, reducing the frustration of misunderstanding and mistakes. This Dissectogram can also be used in combination with Hubbard's three-dimensional zoology models in lieu of using animal specimens. It depicts correct dissection procedures, necessary dissection tools, and proper scientific terminology. An exceptional aid for reviewing information, this product will dramatically improve your students' zoology knowledge.

Age Range: High School – College

EARTHWORM DISSECTION

EARTHWORM

Ward's Biology
Tel: (800) 962-2660
Fax: (800) 635-8439

Model
Price: $445.00

Your students will be able to get an incredible look inside an earthworm with this model. The first third of the body has been opened up and enlarged 25 times to give a beautifully detailed view of the internal structures such as the septum, coelom, aortic arches and intestine. Students can also separate this model into three parts so it can be studied in greater depth. The 20" x 10" x 5" is mounted on a stand with a base.

Age Range: Grades 7 – 12

THE EARTHWORM

Nebraska Scientific
Tel: (800) 228-7117

CD-ROM
Price: $69.95

The Earthworm is an interactive CD-ROM ideal for teaching earthworm anatomy in the classroom. The CD features:

- Full color action incorporating video footage of an actual dissection
- Shows in detail the anatomy of the earthworm
- Highlights anatomical terms
- Explains, describes and details the earthworm's reproductive, circulatory, digestive and nervous systems
- Includes video footage of the earthworm in its natural habitat, including action footage of the circular and longitudinal muscles in action
- Color animation and graphic enlargements depict hard to see anatomical structures and reinforce details about the earthworm
- Fully interactive student self testing and review capabilities

Computer Requirements:

Mac: Minimum 601 chip/100 MHz System 7.x QuickTime 2.0 8meg RAM VGA 640 x 480 4x CD-ROM Sound Card

Windows: Minimum 486/66 MHz Windows 3.1 or Windows 95 8 meg RAM VGA 640 x 480 4x CD-ROM Sound Card

Age Range: Grades 7 – 12

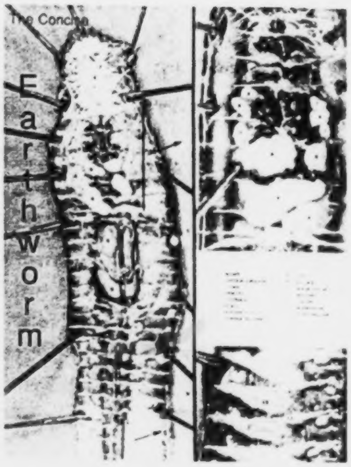
THE CONCISE EARTHWORM DISSECTION CHART

BioCam Communications, Inc.
Tel: (800) 667-3316
Fax: (800) 668-2279

Chart
Available as Set
Available Individually
Price: $4.50

This 8 1/2" x 11" chart uses high quality photography and microphotography to depict the complete dissection of the earthworm. It is printed on both sides of stiff card stock. A plastic sleeve is provided for protection when not in use.

The price is reduced to $3.95 each when ordering 10 or more in any combination.



In Alaska, call collect at (604) 768-4242, or fax at (604) 768-7679.

Age Range: Grades 8 – 12

EARTHWORM MODEL ACTIVITY SET

C2756
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Model, Guide, Color Transparency
Available as Set
Available Individually
Price: $89.25

Introduce your students to anatomy with this model shown in raised relief. Classical relief of the anterior portion of the earthworm shows the internal organs and systems representative of primitive invertebrates. The model clearly illustrates the body in cross section and is capable of replacing the use of animal specimens in the classroom.

Activity set includes a 24" W x 18" H raised relief model, detailed activity guide and color transparency.

Age Range: Grades 8 – 12

INSTRUCTIONAL SOFTWARE: GENERAL BIOLOGY – THE EARTHWORM

Ventura Educational Systems
Tel: (800) 336-1022
Fax: (805) 473-7382

Computer Program
Available for Loan
Price: $59.95

The study of invertebrate anatomy is an essential part of the biology curriculum. Teachers and students will find The Earthworm to be the perfect alternative to dissection units. The Earthworm introduces the anatomical structures and functions of the common earthworm.

Topics include digestion, sensation, control and reproduction. A cross-sectional view is provided. Activities include identifying parts of the earthworm represented by computer graphics, referencing the database to find information and answering questions in a multiple choice quiz.

Computer Requirements:

Mac: LC or higher — 1MB RAM

Apple: 2E or higher — 64K/128K for ProDOS version

EARTHWORM DISSECTION

IBM: PC or 100% compatible 512K w/CGA graphics

Lab Pack (5): $109.95
Lab Pack (10): $159.95
Network (30 stations): $359.95

Age Range: Grade 7 and higher

THE EARTHWORM: A TECHNOLOGICAL DISSECTION

Science Works, Inc
Tel: (910) 712-0353

Computer Program/CD-ROM
Price: $59.95 each

Finally, a truly workable alternative to animal dissection that goes way beyond supplementary pre- or post-lab use. This new and exciting program was developed by four master science teachers. Using cutting-edge technology, digitized photographs of real animals will enable your students to electronically "dissect" the specimen right on the computer.

In classroom tests across the U.S.A. and Canada, students and teachers alike have praised this software for its accuracy and ease of use. It is without equal in reinforcing student learning and observation in a way that lab work cannot — students can work at their own pace, they can make up for missed classes, and the dissection can be repeated as many times as necessary, all at no additional cost! And, it is without the inherent dangers and discomforts associated with the cutting and handling of actual animal specimens.

This program is a time-saver, a cost-saver, and has outstanding potential as a learning tool in any school teaching biology, anatomy, or the life sciences.

This module contains two disks that are duplicatable for backup, and is available separately or as part of a series. Special combination packages and network versions are available at significant savings.

Computer Requirements:

Mac: 4MB RAM or higher, with hard drive
System 6.0.7 or higher
Color monitor
System 7 compatible

IBM: PC or 100% compatible
640K RAM
DOS 3.3 or higher
MCGA graphics
Mouse

Age Range: High School – College

FETAL PIG DISSECTION

BIOLAB PIG

Pierian Spring Software
Tel: (800) 304-4535
Fax: (503) 222-0771

Computer Program
Price: $49.00

BioLab Pig provide an in-depth dissection of a fetal pig. Systems included are: digestive, respiratory, urogenital, endocrine, and skeletal. The extensions provide an interactive explanation of five life processes. The areas included are: peristalsis, heart function, antagonistic muscles, kidney function, and hormone balance.

Computer Requirements:
Recommended System: PowerMac or '040-based, 4MB of available memory, 256 colors, 2x CD-ROM

Minimum System Requirements:
Macintosh LCIII, ('030 25 MHz), 3MB of available memory, System 7.x,12" 256-color monitor, 2x CD-ROM

5-CD User Pack: $209.00
10-CD User Pack: $369.00
Site License: $549.00

Age Range: Grades 6 – 12

DISSECTION & ANATOMY OF THE FETAL PIG

S17618D
Fisher-EMD
Tel: (800) 955-1177/(312) 378-7770
Fax: (312) 378-7174

Video 25:26 min.
Available as Set
Available Individually
Price: $167.00

You will have a powerful tool at your fingertips when you bring this educational videotape of an actual fetal pig dissection into your classroom. This video is a versatile teaching aid and can be used as an alternative to an actual dissection.

The video presents students with a close-up view of the special procedures used for dissecting the fetal pig. It graphically details the external anatomy of the fetal pig. Then, proper dissection techniques are followed by a comprehensive review of the internal anatomy and physiology. A series of specific review questions is included.

Each video comes with a protective storage case.

Age Range: High School – College

DISSECTION VIDEO SERIES I – FETAL PIG

A5VH-1215
Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

Video w/Teacher's Guide 30 min. approx.
Available as Set
Available Individually
Price: $70.00

This high quality video illustrates a start-to-finish dissection. Utilizing the most up-to-date equipment and techniques, the video follows every step of the dissection process. Following the organization of most lab manuals, this program can be used as a replacement for live animal dissection. Full-color close-ups correlate to a careful narrative to make it easy for students to follow along. Especially difficult-to-locate anatomical structures are identified by graphics and pointers. This program is accompanied by a printed script with numbered frame references and a complete glossary.

Age Range: Grades 7 – 12

DISSECTION OF A FETAL PIG

ACL314-C
Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

2 Filmstrips w/Teacher's Guide Avg. 14 min.
Available as Set

FETAL PIG DISSECTION

Available Individually
Price: $50.00

You will find this complete introduction to the dissection of a fetal pig invaluable as you help your students discover how organisms are put together and how their bodies function. The fetal pig is a superb example of mammals because it not only illustrates the anatomy of the adult mammal but also provides information about structures in the fetal body. Excellent alone or with other teaching tools to supplant classroom dissection of the fetal pig.

Age Range: High School – College

DISSECTOGRAMS – FETAL PIG

C2197
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Cards - Set of 4, 19" x 11"
Available as Set
Available Individually
Price: $19.90

Four large 19" x 11" laminated cards depict the relevant anatomic features of the fetal pig. Students are guided step-by-step through the dissection process, reducing the frustration of misunderstanding and mistakes. This Dissectogram can also be used in combination with Hubbard's three-dimensional zoology models in lieu of using animal specimens. It depicts correct dissection procedures, necessary dissection tools, and proper scientific terminology. An exceptional aid for reviewing information, this product will dramatically improve your students' zoology knowledge.

Age Range: High School – College

THE FETAL PIG

Tangent Scientific Supply
Tel: (800) 363-2908
Fax: (905) 704-1555

Computer Program, CD-ROM
Price: $99.00

Now students can study both the external and internal anatomy of the fetal pig with this easy-to-use program. Students navigate the program using a menu to chose various full-screen "views" of a fetal pig. Pointing at an anatomical feature results in the structure being automatically outlined to enhance recognition. Clicking on the left mouse button produces a caption containing the name of the feature and a verbal pronunciation of the feature. Students practice identifying anatomical features using true-or-false, fill in the blank, or multiple choice quizzing strategies. Students can record their answers on the on-screen notepad which can be printed or saved to disk.

Computer Requirements:
IBM PC or compatible; 386 processor (486 recommended); VGA monitor, 256 colors; 2x CD-ROM drive.

Age Range: Senior High – University

FETAL PIG, FEMALE

Ward's Biology
Tel: (800) 962-2660
Fax: (800) 635-8439

Model
Price: $325.00

Life-size Model with Removable Internal Organs

This life-size model, cast from a specially prepared specimen, shows all of the intricate structural detail usually only seen on a real dissected specimen. Features all of the internal organs, major arteries and veins found along the body cavity, head, and neck. In addition, the heart, lungs, stomach, liver and intestines are removable as a single unit so students can study the deeper organs and vasculature. One kidney is sectioned to show renal circulation. Includes key card which identifies over 100 anatomical features. Made of a unique material for flexibility and durability. Actual length, 20".

Age Range: Grades 7 – 12

FETAL PIG MODEL ACTIVITY SET

C2757
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Model, Guide, Color Transparency
Available as Set
Available Individually
Price: $89.25

Introduce your students to anatomy with this model shown in raised relief. Each model illustrates internal structures in graphic detail and is capable of replacing the use of animal specimens in the classroom.

This model illustrates a dissected portion of the abdominal and thoracic organs. The male reproductive system is shown ventrally. A dorsal view allows examination of the female reproductive organs, as well as the brain, muscle, and nervous system. An inset diagram also outlines the circulatory system.

Activity set includes a 24" W x 18" H raised relief model, detailed activity guide and two color transparencies.

Age Range: Grades 8 – 12

INSTRUCTIONAL SOFTWARE: GENERAL BIOLOGY – THE FETAL PIG

Ventura Educational Systems
Tel: (800) 336-1022
Fax: (805) 473-7382

Computer Program
Available Individually
Price: $59.95

Your students will go hog wild over the interesting information and detailed graphics used in The Fetal Pig. This program is a useful tool for both individual students and for classroom or group demonstrations. The Fetal Pig provides a comprehensive investigation of the anatomical structures and biological functions common to mammals. Topics include: skeletal system, nervous system, cardiovascular system, reproductive system and the musculature.

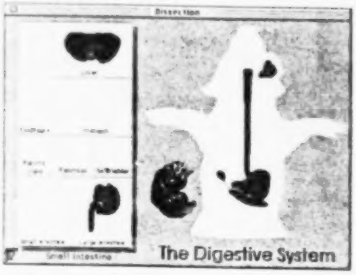
FETAL PIG DISSECTION

MacPIG

Intellimation
Tel: (800) 346-8355/(805) 968-2291
Fax: (805) 968-8899

Computer Program
Price: $59.00

Now students can learn the lessons taught by animal dissection with this interactive laboratory application. MacPig helps your students learn the structure, function, and location of the digestive, respiratory, urogenital, endocrine and skeletal systems through classic fetal pig dissection. Students begin with pre-lab information on the structure, functions, and location of the five major systems. The function and physical characteristics of each organ are described on-screen after removal by the student. Review quizzes follow each system and a comprehensive "Pig Test" reinforces all major concepts. On-line extension activities involve students in simulations of heart rate and the effects of drugs, peristalsis, kidney function, and hormone regulation mechanism. Includes color and B&W.



Computer Requirements:
Mac: 2MB RAM or higher
System 6.0.5 or higher
Color version requires color monitor
System 7 compatible

Single copy: 4FCK-887-A $59.00
Site license: 4FCK-887-C $269.00

Age Range: Grades 10 – 12

THE FETAL PIG

Fisher-EMD
Tel: (800) 955-1177/(312) 378-7770
Fax: (312) 378-7174

Model
Available for Loan
Price: $636.00

This model is a superbly detailed display of the body system that most closely resembles that of our own. Twice its actual size and mounted on a sturdy base, the fetal pig model will enlist the curiosity of middle school to college level students. A separate piece contains a graphic rendering of the internal organs and basic pattern of blood supply.

Age Range: Grade 7 – College

Textual information is linked to parts of the graphic. The activities include playing an identification game, using the database to find information and answering a multiple choice quiz.

Computer Requirements:
Mac: LC or higher — 1MB RAM
Apple: 2E or higher — 64K/128K for ProDOS version
IBM: PC or 100% compatible 512K w/CGA graphics

Lab Pack (5): $109.95
Lab Pack (10): $159.95
Network (30 stations): $359.95

Age Range: Grade 7 and higher

LABORATORY ANATOMY OF THE FETAL PIG

S51340A
Fisher-EMD
Tel: (800) 955-1177/(312) 378-7770
Fax: (312) 378-7174

Book
Price: $28.29

This manual, by Theron O. Odlaug, contains 60 pages with 59 drawings. It is printed in large format and spiral bound.

Age Range: High School – College

THE CONCISE FETAL PIG DISSECTION CHART

BioCam Communications, Inc.
Tel: (800) 667-3316
Fax: (800) 668-2279

Chart
Available as Set
Available Individually
Price: $4.50

This 8 1/2" x 11" chart uses high quality photography and microphotography to depict the complete dissection of the fetal pig. It is printed on both sides of stiff card stock. A plastic sleeve is provided for protection when not in use.

The price is reduced to $3.95 each when ordering 10 or more in any combination.

In Alaska, call collect at (604) 768-4242, or fax at (604) 768-7679.

Age Range: Grades 8 – 12

THE FETAL PIG: A TECHNOLOGICAL DISSECTION

Science Works, Inc.
Tel: (910) 712-0353

Computer Program/CD-ROM
Price: $59.95 each

Finally, a truly workable alternative to animal dissection that goes way beyond supplementary pre- or post-lab use. This new and exciting program was developed by four master science teachers. Using cutting-edge technology, digitized photographs of real animals will enable your students to electronically "dissect" the specimen right on the computer.

In classroom tests across the U.S.A. and Canada, students and teachers alike have praised this software for its accuracy and ease of use. It is without equal in reinforcing student learning and observation in a way that lab work cannot — students can work at their own pace, they can make up for missed classes, and the dissection can be repeated as many times as necessary, all at no additional cost! And, it is without the inherent dangers and discomforts associated with the cutting and handling of actual animal specimens.

This program is a time-saver, a cost-saver, and has outstanding potential as a learning tool in any school teaching biology, anatomy, or the life sciences.

FROG DISSECTION

This module contains two disks that are duplicatable for backup, and is available separately or as part of a series. Special combination packages and network versions are available at significant savings.

Computer Requirements:

Mac: 4MB RAM or higher, with hard drive
System 6.0.7 or higher
Color monitor
System 7 compatible

IBM: PC or 100% compatible
640K RAM
DOS 3.3 or higher
MCGA graphics
Mouse

Age Range: High School – College

BIOLAB FROG

Pierian Spring Software
Tel: (800) 304-4535
Fax: (503) 222-0771

Computer Program
Price: $49.00

This teacher-developed program gives students hands-on dissection experience and introduces them to the concepts of physiology and anatomy. BioLab Frog encourages students to learn by doing as they explore the external features and internal systems of the frog. The program is packed with interactive experimentation, and enlightening explanations of how form relates to function. Students are given all the necessary pre-lab data, system functions, structures and locations of parts to explore the external mouth, digestive, circulatory, reproductive, and skeletal systems.

Four mini labs are also included in the program for students to sharpen critical thinking skills as they investigate and collect, graph, and interpret data. The close-up graphics and colorful videos illustrate functions that are normally hard to view. This program may be used as a replacement for the live dissection lab.

Computer Requirements:
Recommended System: PowerMac or '040-based, 4MB of available memory, 256 colors, 2x CD-ROM

Minimum System Requirements:
Macintosh LCIII, ('030 25 MHz) 3MB of available memory, System 7.x, 12" 256-color monitor, 2xCD-ROM

Age Range: Grades 6 – 12

BIO-LOGICAL MODELS – FROG ANATOMY

National Teaching Aids
Tel: (516) 326-2555

Model
Available for Loan
Price: $270.00

This unique model is a two-dimensional anatomy chart with removable organs made of pure vinyl. The model's parts are clearly numbered and correspond to an informative instructional key card. Extremely popular with teachers and students alike, this Bio-LOGICAL Model provides an excellent opportunity to study frog anatomy. The ease with which this "dissection" can be repeated makes it perfect for beginning students.

Bio-LOGICAL Models are also available for Earthworm and Human studies.

Age Range: Grades 7 – 12

BIOLOGY CHART SERIES – FROG ANATOMY

1891
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Chart
Available as Set
Available Individually
Price: $49.00/$64.00

Three principal views detail a complete ventral dissection of a male frog, the female urogenital system, and the central nervous system from the dorsal aspect. Supplementary figures show the ventral aspect of the brain and cranial nerves, oral cavity, and a feeding sequence illustrating the action of the tongue.

To Order Single Charts:
Specify catalog number shown plus appropriate suffix to indicate your choice of mounting option.

For Single Charts with Hang-up Mount:
Add suffix (-10) to catalog number. Chart is mounted with rods top and bottom with loops for hanging. $49.00 each.

For Single Charts with Spring Roller Mount:
Add suffix (-14) to catalog number. Chart is mounted with individual spring roller attached to steel backboard. $64.00 each.

Age Range: Grades 7 – 12

BIOLOGY CHART SERIES – FROG DEVELOPMENT

1890
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Chart
Available as Set
Available Individually
Price: $49.00/$64.00

Fourteen key stages in the development of the frog, from fertilization through cleavage, embryo, tadpole limb development, and adult.

To Order Single Charts:
Specify catalog number shown plus appropriate suffix to indicate your choice of mounting option.

For Single Charts with Hang-up Mount:
Add suffix (-10) to catalog number. Chart is mounted with rods top and bottom with loops for hanging. $49.00 each.

For Single Charts with Spring Roller Mount:
Add suffix (-14) to catalog number. Chart is mounted with individual spring roller attached to steel backboard. $64.00 each.

Age Range: Grades 7 – 12

FROG DISSECTION

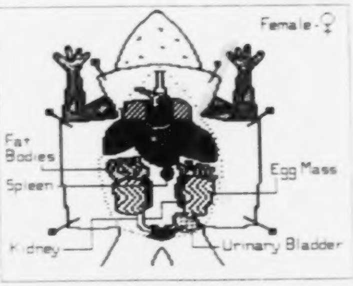
BIOLOGY DISSECTIONS – FROG

Cross Educational Software
Tel: (800) 768-1969/(318) 255-8921

Computer Program
Available as Set
Available Individually
Price: $29.95

This dissection guide was written and classroom tested by a high school teacher. The software is fully capable of replacing animal dissection in the classroom.

The program has 15 to 30 pictures and can be used several ways. It teaches vocabulary by giving the definitions and functions of the body structures together with pictures. It can go through a step-by-step dissection with all the safety warnings and techniques. It can also be used for self-testing. Approximately 50 to 100 questions are included with the dissection guide: true-false, multiple choice, and matching the organ names with pictures.



The Apple version is copy-protected with a free back-up disk included. 5 1/4 inch disks are standard unless otherwise requested.

The IBM/Tandy version requires CGA or better graphics. Both large and small disks are included in the package.

The Macintosh program will display color if you have it.

Computer Requirements:
Apple (CR-090): 48K
IBM (CR-131): 512K
Mac (CR-210): 1MB

Age Range: High School

DISSECTION & ANATOMY OF THE FROG

S17618E
Fisher-EMD
Tel: (800) 955-1177/(312) 378-7770
Fax: (312) 378-7174

Video 20.50 min
Available as Set
Available Individually
Price: $172.05

You will have a powerful tool at your fingertips when you bring this educational videotape of an actual frog dissection into your classroom. This video is a versatile teaching aid and can be used as an alternative to an actual dissection.

The video presents students with a close-up view of the special procedures used for dissecting the frog. It graphically details the external anatomy of the frog. Then, proper dissection techniques are followed by a comprehensive review of the internal anatomy and physiology. A series of specific review questions is included.

Each video comes with a protective storage case.

Age Range: High School – College

DISSECTION VIDEO SERIES I – FROG

A5VH-1216
Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

Video w/Teacher's Guide 30 min. approx.
Available as Set
Available Individually
Price: $70.00

This high quality video illustrates a start-to-finish dissection. Utilizing the most up-to-date equipment and techniques, the video follows every step of the dissection process. Following the organization of most lab manuals, this program can be used as a replacement for live animal dissection. Full-color close-ups correlate to a careful narrative to make it easy for students to follow along. Especially difficult-to-locate anatomical structures are identified by graphics and pointers. This program is accompanied by a printed script with numbered frame references and a complete glossary.

Age Range: Grades 7 – 12

DISSECTOGRAMS – FROG

C2191
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Cards - Set of 4, 19" x 11"
Available as Set
Available Individually
Price: $19.90

Four large 19" x 11" laminated cards depict the relevant anatomic features of the frog. Students are guided step-by-step through the dissection process, reducing the frustration of misunderstanding and mistakes. This Dissectogram can also be used in combination with Hubbard's three-dimensional zoology models in lieu of using animal specimens. It depicts correct dissection procedures, necessary dissection tools, and proper scientific terminology. An exceptional aid for reviewing information, this product will dramatically improve your students' zoology knowledge.

Age Range: High School – College

THE DIGITAL FROG

Cambridge Development Laboratory
Tel: (800) 637-0047
Fax: (617) 890-2894

Compact Disc
Price: $169.95

Labpack: 5 CD's, $249.95

Digital Frog International

This dynamic and effective new educational tool uses frog-friendly dissection to teach biology. It eliminates the need for real frog dissection, focusing the student on the study of structure and function, rather than on the process of dissection. It also encourages

FROG DISSECTION

squeamish students who may otherwise avoid biology and science. The Digital Frog makes learning biology an enjoyable experience. Students have fun and are able to learn independently through exploration and discovery. Its three modules are integrated into one fully interactive tool. Dissection includes full-screen, full color photographs with abundant 'hot' spots and video clips detailing each step. Anatomy, with its animation, movies, photographs, and detailed text, is seamlessly linked to the dissection module. The Ecology Module gives students insight into species, diversity, behavior and the life cycle. Students also get a comprehensive introduction to the Toronto Zoo's Adopt-A-Pond habitat conservation program.

This is a truly interactive CD with two levels of operation (standard and advanced), full motion video, animations, sounds, narration, in-depth text, and full color photographs. The student workbook provides a structured way to explore The Digital Frog, and serves as a reference manual once completed.

Computer Requirements:
Runs with 8MB under Windows 3 or '95 with a 386 processor or better and a sound card or on Macintosh LCIII or up with System 7 or later.

Age Range: Grades 10 – College

FROG MODEL ACTIVITY SET

C2750
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Model, Guide, Color Transparency
Available as Set
Available Individually
Price: $89.25

Introduce your students to anatomy with this model shown in raised relief. Each model illustrates internal structures in graphic detail and is capable of replacing the use of animal specimens in the classroom.

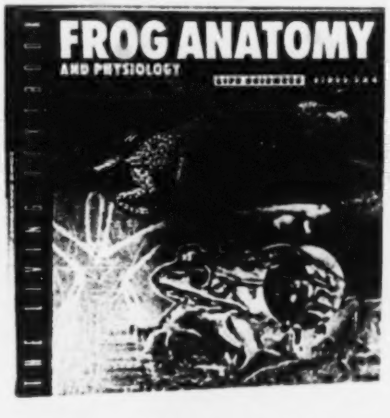
FROG ANATOMY AND PHYSIOLOGY

415-2 (Mac)
416-0 (IBM)
Optical Data Corporation
Tel: (800) 524-2481/(908) 668-0022
Fax: (908) 755-0577

Computer Program/Videodisc
Available for Loan
Price: $395.00

This comprehensive look at amphibian anatomy and physiology incorporates one double-sided videodisc, image directories in printed and software formats, interactive computer software, and a bar-coded lesson guide with lesson plans organized by topic.

The interactive computer software features more than 34 motion video segments, 150 slides and 50 diagrams. The lesson guide provides a selection of correlated still images and video segments. The comprehensive review offered by this material covers lab safety, dissection techniques and tools, and can substitute for performing frog dissections in the classroom.



The material covered includes not only respiration, circulation, digestions, excretion, reproduction and development, but also neural communication, movement, adaptation. Students learn about major sensory organs and how they help the frog survive.

In the Video of Natural Habitats, still images provide detailed information about embryology, metamorphosis, comparative anatomy, behavior and other topics. Video segments feature a variety of frogs in their natural habitats, showing how they avoid predators and obtain food, water and oxygen on land and in water. They also cover the anatomy and physiology of all major organs, chemical control of organs and temperature control.

Program Components:
- One double-sided videodisc
- Barcoded lesson guides with lesson plans organized by topic, providing a selection of correlated still images and video segments
- Image directories in printed and software formats
- Interactive computer software (Video Cards 3.0 for Macintosh or IBM and Lesson Maker for Macintosh)
- Self-paced training videodisc
- Interface cable for Macintosh or IBM

Hardware Requirements:

Level I (no computer)
- Videodisc player with remote control (barcode reader optional)
- Color TV or video monitor

Level III (with computer)
- Videodisc player with remote control and computer interface (barcode reader optional)
- Color TV or video monitor
- **Mac:** 2MB RAM with hard drive, System 6.0.5 or later (System 7 users need 4MB RAM), HyperCard 2.0 or later (HyperCard Player 2.1, included with Video Cards 3.0, may be used with System 6.0.7 or later)
- **IBM:** PC or 100% compatible, 386SX-25 MHz or better, 4MB RAM, DOS 3.1, Microsoft Windows 3.1, VGA display 640 x 480

Age Range: High School – College

FROG DISSECTION

squeamish students who may otherwise avoid biology and science. The Digital Frog makes learning biology an enjoyable experience. Students have fun and are able to learn independently through exploration and discovery. Its three modules are integrated into one fully interactive tool. Dissection includes full-screen, full color photographs with abundant 'hot' spots and video clips detailing each step. Anatomy, with its animation, movies, photographs, and detailed text, is seamlessly linked to the dissection module. The Ecology Module gives students insight into species, diversity, behavior and the life cycle. Students also get a comprehensive introduction to the Toronto Zoo's Adopt-A-Pond habitat conservation program.

This is a truly interactive CD with two levels of operation (standard and advanced), full motion video, animations, sounds, narration, in-depth text, and full color photographs. The student workbook provides a structured way to explore The Digital Frog, and serves as a reference manual once completed.

Computer Requirements:
Runs with 8MB under Windows 3 or '95 with a 386 processor or better and a sound card or on MacIntosh LCIII or up with System 7 or later.

Age Range: Grades 10 – College

FROG MODEL ACTIVITY SET

C2750
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Model, Guide, Color Transparency
Available as Set
Available Individually
Price: $89.25

Introduce your students to anatomy with this model shown in raised relief. Each model illustrates internal structures in graphic detail and is capable of replacing the use of animal specimens in the classroom.

FROG ANATOMY AND PHYSIOLOGY

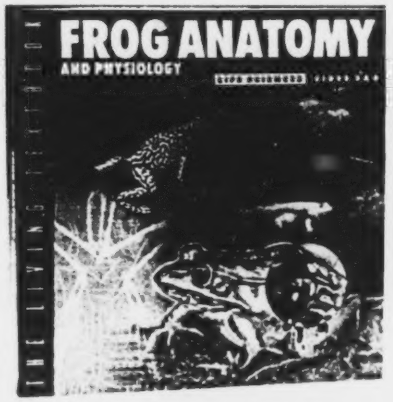
415-2 (Mac)
416-0 (IBM)
Optical Data Corporation
Tel: (800) 524-2481/(908) 668-0022
Fax: (908) 755-0577

Computer Program/Videodisc
Available for Loan
Price: $395.00

This comprehensive look at amphibian anatomy and physiology incorporates one double-sided videodisc, image directories in printed and software formats, interactive computer software, and a bar-coded lesson guide with lesson plans organized by topic.

The interactive computer software features more than 34 motion video segments, 150 slides and 50 diagrams. The lesson guide provides a selection of correlated still images and video segments. The comprehensive review offered by this material covers lab safety, dissection techniques and tools, and can substitute for performing frog dissections in the classroom.

The material covered includes not only respiration, circulation, digestions, excretion, reproduction and development, but also neural communication, movement, adaptation. Students learn about major sensory organs and how they help the frog survive.



In the Video of Natural Habitats, still images provide detailed information about embryology, metamorphosis, comparative anatomy, behavior and other topics. Video segments feature a variety of frogs in their natural habitats, showing how they avoid predators and obtain food, water and oxygen on land and in water. They also cover the anatomy and physiology of all major organs, chemical control of organs and temperature control.

Program Components:
- One double-sided videodisc
- Barcoded lesson guides with lesson plans organized by topic, providing a selection of correlated still images and video segments
- Image directories in printed and software formats
- Interactive computer software (Video Cards 3.0 for Macintosh or IBM and Lesson Maker for Macintosh)
- Self-paced training videodisc
- Interface cable for Macintosh or IBM

Hardware Requirements:

Level I (no computer)
- Videodisc player with remote control (barcode reader optional)
- Color TV or video monitor

Level III (with computer)
- Videodisc player with remote control and computer interface (barcode reader optional)
- Color TV or video monitor
- **Mac:** 2MB RAM with hard drive, System 6.0.5 or later (System 7 users need 4MB RAM), HyperCard 2.0 or later (HyperCard Player 2.1, included with Video Cards 3.0, may be used with System 6.0.7 or later)
- **IBM:** PC or 100% compatible, 386SX-25 MHz or better, 4MB RAM, DOS 3.1, Microsoft Windows 3.1, VGA display 640 x 480

Age Range: High School – College

FROG DISSECTION

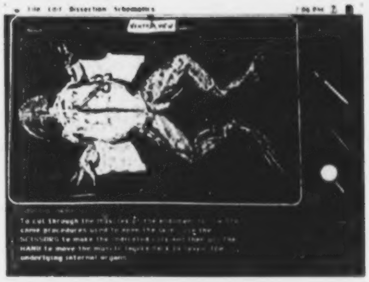
THE FROG: A TECHNOLOGICAL DISSECTION

Science Works, Inc.
Tel: (910) 712-0353

Computer Program
Price: $99.95
CD $59.95

Finally, a truly workable alternative to animal dissection that goes way beyond supplementary pre- or post-lab use. This new and exciting program was developed by four master science teachers. Using cutting-edge technology, digitized photographs of real animals will enable your students to electronically "dissect" the specimen right on the computer.

In classroom tests across the U.S.A. and Canada, students and teachers alike have praised this software for its accuracy and ease of use. It is without equal in reinforcing student learning and observation in a way that lab work cannot — students can work at their own pace, they can make up for missed classes, and the dissection can be repeated as many times as necessary, all at no additional cost! And, it is without the inherent dangers and discomforts associated with the cutting and handling of actual animal specimens.



This program is a time-saver, a cost-saver, and has outstanding potential as a learning tool in any school teaching biology, anatomy, or the life sciences.

This module contains two disks that are duplicatable for backup, and is available separately or as part of a series. Special combination packages and network versions are available at significant savings.

Computer Requirements:
Mac: 4MB RAM or higher, with hard drive
System 6.0.7 or higher
Color monitor
System 7 compatible
IBM: PC or 100% compatible
640K RAM
DOS 3.3 or higher
MCGA graphics
Mouse

Age Range: High School – College

THE GREAT AMERICAN BULLFROG

550
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Available for Loan
Price: $694.00

Twice natural size, this vinyl plastic replica of a sexually mature female bullfrog, *Rana catesbeiana*, has established a new standard for zoological models. It has been called the first practical alternative to dissection.

Including even such fine points as internal nares, vomerine teeth, eustachian tube, and the nictitating membrane of the eye, students are encouraged to compare the frog body plan and organ systems with those of the human and other vertebrates.

Special emphasis has been placed on the amphibian 3-chambered heart.

This is the ONLY frog model with a detachable heart which divides into anterior and posterior halves. Heart chambers and blood vessels throughout the body are color-coded to augment understanding of the circulation of the blood.

Fully dissected, the ventral aspect exposes all the viscera, the buccal cavity, and the musculature of the hind leg.

Half of the mandible, tongue, and glottis, remove as a unit for detailed study. Strategic cutaways of internal organs reveal the bronchi of the lung, stomach rugae, and the lumen of the large intestine.

Multi-level dissections of the dorsal aspect expose the brain and nervous system, the eye and optic nerve, and the ear with a cutaway through the tympanum revealing the columella and eustachian tube.

A deeper dissection of the left half of the body exposes all the bones of the skull and skeleton.

In all, ten organ systems are presented.

Non-breakable, the bullfrog detaches from its hardwood base for hands-on examination. More than 175 hand-numbered features are identified in the accompanying key, which also illustrates the male reproductive system.

Overall dimensions: 21 x 15 x 4 inches (53 x 38 x 10 cm).

Age Range: Grade 8 and higher

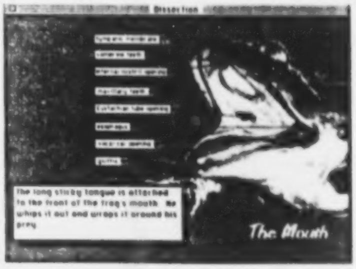
FROG DISSECTION

MacFROG SCHOOL VERSION

Intellimation
Tel: (800) 346-8355/(805) 968-2291
Fax: (805) 968-8899

Computer Program
Price: $49.00 (see below)

Teach your students about five vertebrate frog systems with this animated tutorial. The students carry out the dissections on-screen, receive full descriptions of each part, and are immediately quizzed on the material. MacFrog teaches vertebrate systems quickly and easily, including the mouth, digestive, circulatory, reproductive, and skeletal systems. This program also labels each part of the frog anatomy as students go through the dissection.



The long sticky tongue is attached to the front of the frog's mouth. He whips it out and wraps it around his prey.

Computer Requirements:
Mac: 2MB RAM or higher
System 6.0.5 or higher
Color version requires color or grayscale monitor
System 7 compatible

Single copy: 5FCK-1131-A $49.00
Site license: 5FCK-1131-C $219.00

Age Range: Grades 9 – 12

LABORATORY ANATOMY OF THE FROG

S51352
Fisher-EMD
Tel: (800) 955-1177/(312) 378-7770
Fax: (312) 378-7174

Book
Price: $26.75

This manual, by Raymond A. Underhill, contains 34 pages with 32 drawings. It is printed in large format and spiral bound.

Age Range: High School – College

MacFROG ACADEMIC

4FCH-1130-A
Intellimation
Tel: (800) 346-8355/(805) 968-2291
Fax: (805) 968-8899

Computer Program
Price: $39.00

Bob Doltar, Portland State University

Let your students carry out their frog dissections on-screen using MacFrog Academic. This animated tutorial will allow them to completely dissect five systems: the mouth, digestive, circulatory, reproductive, and skeletal. The student will receive a full description of each part, and is immediately quizzed on the material just covered. A final comprehensive test is included after the lab is completed. This program will allow you to teach vertebrate systems quickly and easily, engage the attention of students who resist hands-on lab work, and allows students to work at their own pace. Easy to use and fun to learn, even the most hesitant student will enjoy this animated dissection tutorial.

Computer Requirements:
Mac: 2MB RAM or higher
System 6.0.5 or higher
Color version requires color or grayscale monitor
System 7 compatible

Single copy: 4FCH-1130-A $39.00
Site license: 4FCH-1130-C $169.00

Age Range: High School – College

OPERATION FROG

Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

CD-ROM
Price: $100.00

Turn your computer into a "virtual laboratory" where students dissect on-screen frogs without even touching a scalpel. Students will choose their proper instruments-scissors, magnifying glass, probe, or forceps-then remove each frog organ in the natural layered order of real dissection and place it on an examining tray for closer inspection. To study the parts of a frog in depth, students view animated images, see videos of live organs in action, and even compare frog and human organs side by side. All parts are clearly labeled and are accompanied by informative text describing the purpose and characteristics of each. Once students complete the dissection, they will be challenged to reverse the process by reconstructing the frog in the exact order it was dissected.

The comprehensive teacher's guide is packed with student lab records, worksheets, and classroom resources for further investigation of frogs.

Hardware Requirements:
LC or better, 4MB RAM, System 7.0.1 or later, and hard drive with 5MB free space.

Age Range: Grades 4 – 9

WHAT'S INSIDE A FROG?

Childcraft
Tel: (800) 631-5657

Model
Price: $16.95

Hands-on biology without the mess! Keep your students hopping with a life-sized and anatomically accurate model. The kit teaches the fundamentals of living systems with 3 separate and fully removable units: the body, the skeleton and vital organs. Also comes with life-cycle display. 42 pieces made of high-impact polystyrene and polyvinyl. Frog is 12 3/4"L x 6 1/2"W x 2 3/4"T

Age Range: Grades 2 – 5

GRASSHOPPER DISSECTION

BIOLOGY CHART SERIES – GRASSHOPPER

1886
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Chart
Available as Set
Available Individually
Price: $49.00/$64.00

The principal figure depicts the external anatomy emphasizing the three major body regions, and three pairs of jointed legs which typify all insects. Supplementary figures portray the seven mouthparts, internal anatomy and the respiratory network consisting of trachea, air sacs and spiracles.

To Order Single Charts:
Specify catalog number shown plus appropriate suffix to indicate your choice of mounting option.

For Single Charts with Hang-up Mount:
Add suffix (-10) to catalog number. Chart is mounted with rods top and bottom with loops for hanging. $49.00 each.

For Single Charts with Spring Roller Mount:
Add suffix (-14) to catalog number. Chart is mounted with individual spring roller attached to steel backboard. $64.00 each.

Age Range: Grades 7 – 12

BIOLOGY DISSECTIONS GRASSHOPPER

Cross Educational Software
Tel: (800) 768-1969/(318) 255-8921

Computer Program
Available as Set
Available Individually
Price: $29.95

This dissection guide was written and classroom tested by a high school teacher. The software is fully capable of replacing animal dissection in the classroom.

The program has 15 to 30 pictures and can be used several ways. It teaches vocabulary by giving the definitions and functions of the body structures together with pictures. It can go through a step-by-step dissection with all the safety warnings and techniques. It can also be used for self-testing. Approximately 50 to 100 questions are included with the dissection guide: true-false, multiple choice, and matching the organ names with pictures.

The Apple version is copy-protected with a free back-up disk included. 5 1/4 inch disks are standard unless otherwise requested.

The IBM/Tandy version requires CGA or better graphics. Both large and small disks are included in the package.

The Macintosh program will display color if you have it.

Computer Requirements:
Apple (CR-091): 48K
IBM (CR-133): 512K
Mac (CR-212): 1MB

Age Range: High School

DISSECTION & ANATOMY OF THE GRASSHOPPER

S17618F
Fisher-EMD
Tel: (800) 955-1177/(312) 378-7770
Fax: (312) 378-7174

Video 8:24 min
Available as Set
Available Individually
Price: $168.00

You will have a powerful tool at your fingertips when you bring this educational videotape of an actual grasshopper dissection into your classroom. This video is a versatile teaching aid and can be used as an alternative to an actual dissection.

The video presents students with a close-up view of the special procedures used for dissecting the grasshopper. It graphically details the external anatomy of the grasshopper. Then, proper dissection techniques are followed by a comprehensive review of the internal anatomy and physiology. A series of specific review questions is included.

Each video comes with a protective storage case.

Age Range: High School – College

DISSECTION VIDEO SERIES II – GRASSHOPPER

A5VH-1221
Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

Video w/Teacher's Guide 9 min
Available as Set
Available Individually
Price: $100.00

Capable of replacing dissection labs, this program provides a clear and detailed presentation of the external anatomy of the specimen, the correct procedures used for dissection, and a review of the internal anatomy and physiological systems. The video is accompanied by a dissection manual and a written examination.

Age Range: Grades 7 – 12

DISSECTOGRAMS – GRASSHOPPER

X2193
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Cards - Set of 4, 19" x 11"
Available as Set
Available Individually
Price: $19.90

Four large 19" x 11" laminated cards depict the relevant anatomic features of the grasshopper. Students are guided step-by-step through the dissection process, reducing the frustration of misunderstanding and mistakes. This Dissectogram can also be used in combination with Hubbard's three-dimensional zoology models in lieu of using animal specimens. It depicts correct dissection procedures, necessary dissection tools, and proper scientific terminology. An exceptional aid for reviewing information, this product will dramatically improve your students' zoology knowledge.

Age Range: High School – College

GRASSHOPPER DISSECTION

GRASSHOPPER MODEL ACTIVITY SET

X2753
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Model, Guide, Color Transparency
Available as Set
Available Individually
Price: $89.25

Introduce your students to anatomy with this model shown in raised relief. Each model illustrates internal structures in graphic detail and is capable of replacing the use of animal specimens in the classroom.

Representational of insects, this model shows the wing and has a portion of the exoskeleton cut away to reveal the internal organs. The often studied mouth is shown in a separate inset, illustrating the frontal view of the head as well as dissected in magnified detail.

Activity set includes a 24" W x 18" H raised relief model, detailed activity guide and color transparency.

Age Range: Grades 8 – 12

THE CONCISE GRASSHOPPER DISSECTION CHART

BioCam Communications, Inc.
Tel: (800) 667-3316
Fax: (800) 668-2279

Chart
Available as Set
Available Individually
Price: $4.50

This 8 1/2" x 11" chart uses high quality photography and microphotography to depict the complete dissection of the grasshopper. It is printed on both sides of stiff card stock. A plastic sleeve is provided for protection when not in use.

The price is reduced to $3.95 each when ordering 10 or more in any combination.

In Alaska, call collect at (604) 768-4242, or fax at (604) 768-7679.

Age Range: Grades 8 – 12

HORSE DISSECTION

VISIBLE HORSE KIT

Anatomical Chart Company
Tel: (800) 621-7500
Fax: (847) 674-0211

Model
Price: $21.95

The Visible Horse Kit is a rare view of the structures of the skeleton and vital organs in a scaled-down version of a thoroughbred equine. Kit measures over 14" long and 12" tall with easy disassembly for a close up view and individual study of vital organs. Kit includes 177 pieces.

Age Range: Grades 5 – 12

A.D.A.M

Adam Software, Inc.
Tel: (800) 755-2326
Fax: (770) 955-3088

COMPUTER PROGRAMS

Adam Interactive Anatomy
This program was developed to take the interactive study of anatomy to a new level. AIA's advanced features enable you to navigate through thousands of anatomical images from the world's most complete database, including pinned atlas images, cadaver photographs, radiographs, and 3D models.

The powerful new search capabilities, multilanguage support, "Transparency" tool, Internet access and "Slide Show" feature are just a few of the many reasons to integrate AIA into your curriculum.

Price: $1,295.00

Age Range: Undergraduate, Graduate, Professional

ADAM Comprehensive
This program has been selected by leading medical schools and universities throughout the world. ADAM Comprehensive combines colorful, fully-dissectible anatomy with powerful interactive tools for complete exploration of the body's systems and structures. Quickly locate and identify over 18,000 images in four views and three magnifications.

Price: $995.00

Age Range: Graduate

HUMAN ANATOMY

ADAM Practice Practical
Simulate gross anatomy practical exams complete with "pinned" atlas images and time limits, just like in the lab. Customize tests by region, system, or your specific course syllabus. This program combines 15,000 questions with over 500 detailed ADAM illustrations, cadaver photographs and radiographs.

Price: $69.95

Age Range: Graduate

ADAM *The Inside Story*
This program is a multimedia journey into the secrets of the human body. Highlights of this award-winning CD-ROM include:

- Over 4,000 individual structures can be identified as the human anatomy is revealed layer by layer, from skin to skeleton in hundreds of layers. The body can be viewed in anterior, posterior, lateral, and medial views.
- More than four hours of detailed animation, video, and sound show and explain normal physiological processes and also what happens to the body when not appropriately cared for.
- Quick reference the glossary of anatomical terms, audio pronunciation, system reference test or challenge your students with interactive anatomy puzzles for a great review.
- You can now take the images seen on CD and print them on transparencies for course presentations or as hard copy for handouts and exams.
- The School Edition includes a Teacher's Guide of curriculum integration activities to help educators for grades 5-8 integrate the program into the classroom. Teacher materials include ideas on how to get started managing computer resources in the classroom and working with special needs students.

Price: $69.95

Age Range: High School-College Intro

Computer Requirements: Call for information

HUMAN ANATOMY

ADAM Essentials

An excellent reference and study tool for introductory anatomy, physiology, or human biology. ADAM Essentials contains terminology typically found in the introductory texts and the basic structure labels are appropriate for those students preparing for college courses. Over 4,000 identification labels, approximately 100 layers, 38 narrated animations for study of basic physiology, and six interactive puzzles to test the knowledge of basic anatomy make this a straight-forward interactive learning tool.

Price: $199.95

Age Range: High School-College Intro

ADAM Benjamin/Cummings Interactive Physiology

This product offers an exciting interactive exploration of the physiological concepts and processes that are tough to learn and tough to teach. Co-developed by Benjamin/Cummings and ADAM Software, Inc. these CD-ROMs use richly detailed graphics, animation, sound, video and interactive quizzes to bridge the gap between simply memorizing a concept and truly understanding it.

Contents for each CD-ROM:

- Cardiovascular System
- Muscular System
- Respiratory System
- Nervous System
- Urinary System

Price: $395.00

Age Range: College

Please call company for information on computer requirements for all ADAM programs.

MANIKEN 1

Human Anatomy Tools of the ANATOMIKEN SYSTEM
Zahourek Systems
Tel: (800) 950-5025
Fax: (970) 667-5025

Models

Price: Call for information

MANIKEN is a series of conceptual human anatomy models. These models are designed so that anyone can take the ideas of human form and function into their own hands. Students will form muscles of plastiline clay and attach them to the model, guided by the Instruction Manual. Students will think and feel function as they build form. For learning, teaching or research, build MANIKEN again and again, with ever-increasing skill and satisfaction.

The result of 10 years of research and development, MANIKEN is an elegant interpretation of the human skeleton. Each one is meticulously hand-made, light-weight, sized for easy handling. Convenient, safe and economical for years of use.

Each kit includes:

- MANIKEN 1, including oak base and extra hardware
- 3.5 lbs. of non-toxic, plastiline clay in terra cotta color
- Basic Clay Tool Set: wooden knife, wire-loop, scalpel and putty knife
- MANIKEN Manual and Instructional Booklet, with suggested muscle-order
- Syllabus
- VHS Instructional Videotape

ADVANCED BIOLOGY

William K. Bradford Publishing Co.
Tel: (800) 421-2009
Fax: (508) 263-9375

Computer Program

Price: $132.00 each

This package is a fully illustrated, animated review of topics for advanced high school biology students. They can use this program to enhance their problem-solving abilities and to prepare for standardized exams such as Achievements or Advanced Placement tests. Students can also use this program to research new concepts or to review unfamiliar or difficult ones. This program's use of a comprehensive, high speed search index makes it an ideal resource in school libraries, lab settings and classroom workstations.

Advanced Biology contains the following topics:

- Molecular Biology
- Microbiology
- Eukaryotic Cells
- Specialized Cells
- Nervous System
- Endocrine System
- Circulatory System
- Lymphatic and Immune Systems
- Digestive System
- Excretory System
- Muscle and Skeletal Systems
- Respiratory and Skin Systems
- Reproductive System
- Genetics and Evolution

Computer Requirements:

Mac: 4MB RAM or higher
Hard disk with 3.7MB free space
Color version requires color monitor
IBM: Windows 3.1 or higher, 386 or better
4MB free RAM
Hard disk with 4.8MB free space
VGA adapter

Single copy: ADBI $132.00 (school price)
Lab Pack (10): ADBIL $528.00 (school price)
Site license: ADBIN $792.00 (school price)

Age Range: Grades 11 – 12

BASIC KNOWBODY TEACHING TORSO

T28
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model

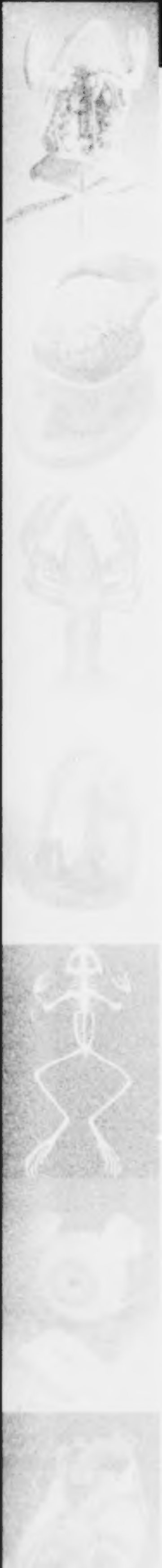
Price: $1,105.00

Exhibiting all the basic anatomical details necessary for an introduction to the functional systems of the human body, the Basic KnowBody has 150 hand-numbered anatomical features, 19 dissected or dissectible structures, and includes the following 10 detachable parts:

Eyeball; brain half (one-piece); left lung; right lung (showing pulmonary blood vessels and bronchioles); heart (2 halves); liver with gallbladder and segment of diaphragm; one-piece stomach; one-piece small and large intestine unit; one-piece torso and head unit.

The Basic KnowBody stands 37 inches (94 cm) tall and is rigidly mounted on hardwood base.

Age Range: Grade 7 – College



HUMAN ANATOMY

ADVANCED KNOWBODY TEACHING TORSO

T29
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $1,380.00

More detailed than the Basic KnowBody, the Advanced KnowBody has 200 hand-numbered anatomical features, 20 dissected or dissectible structures, and includes the following detachable parts:

Eyeball with extraocular muscles; brain half — 4 parts including cerebrum (2 parts), cerebellum, and brain stem; left lung with ribs; right lung with ribs (showing pulmonary blood vessels and bronchioles); heart (2 halves); liver with gallbladder and segment of diaphragm; stomach (2 halves); one-piece small and large intestine unit; one-piece torso and head unit.

The Advanced KnowBody stands 37 inches (94 cm) tall and is rigidly mounted on hardwood base.

Age Range: High School – College

DELUXE KNOWBODY TEACHING TORSO WITH DETACHABLE HEAD

T10
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $1,998.00

Much more detailed internally than either the Basic or Advanced KnowBody Torsos, with special emphasis placed on the brain and digestive organs, the Deluxe KnowBody Torso is characterized by its detachable head which greatly aids studies of the brain, head and neck. It has 23 dissected or dissectible structures, and 300 structural highlights have been hand-numbered for ready identification. The Deluxe KnowBody also has the following 16 detachable parts:

Head; eyeball with extraocular muscles; brain half with arteries — 4 parts including cerebrum (2 parts), cerebellum, and brain stem; left lung with ribs (showing pulmonary blood vessels and bronchioles sectioned open); right lung with ribs (showing blood vessels and bronchioles intact); heart (2 halves); liver and gallbladder with color-coded blood vessels and ducts, (includes section of diaphragm); stomach (2 halves); large intestine; small intestine; torso unit.

The Deluxe KnowBody stands 38 inches (97 cm) tall and is mounted on a rotating hardwood turntable base.

The Deluxe Black KnowBody Teaching Torso (#711) is also available. This Torso contains the same features described above but externally reflects the African heritage.

Age Range: High School - College

ANAMODS (COMPLETE SET)

C13200
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Model
Available as Set
Available Individually
Available for Loan
Price: $10.95 each/$84.00 set of 9

Anamods are anatomical models printed in full color on durable vinyl. Each organ model is made up of die-cut pieces that easily fit together to create a detailed 3-D model. Anamods are number-coded and keyed to a comprehensive Teacher's Guide, included with each model. An attractive plastic stand is also included with each Anamod.

C13001 — Heart
C13002 — Brain
C13003 — Kidney
C13004 — Eye
C13005 — Ear
C13006 — Lung
C13010 — Liver
C13011 — Male Reproductive System
C13012 — Female Reproductive System
C13200 — Set of all 9 Anamods

Age Range: Grade 7 and higher

BIO-LOGICAL MODELS– HUMAN ANATOMY

National Teaching Aids
Tel: (516) 326-2555

Model
Available for Loan
Price: $270.00

This unique model is a two-dimensional anatomy chart with removable organs made of pure vinyl. The model's parts are clearly numbered and correspond to an informative instructional key card. Extremely popular with teachers and students alike, this Bio-LOGICAL Model provides an excellent opportunity to study human anatomy. The ease with which this "dissection" can be repeated makes it perfect for beginning students.

Bio-LOGICAL Models are also available for Earthworm and Frog studies.

Age Range: Grades 7 - 12

BIOLOGY TOPICS – HUMAN BODY I AND II

William K. Bradford Publishing Co.
Tel: (800) 421-2009
Fax: (508) 263-9375

Computer Program
Price: $45.00 each

These two highly visual and stimulating tutorials offer self-paced, individualized learning opportunities, and will help high school level students increase their biology knowledge and problem-solving skills. Full of detailed, accurate illustrations, these programs also provide instruction through text and figures. Both come complete with diagnostic self-tests and include a substantial number of question types (fill-in, multiple choice, matching, labeling, pairing, and vocabulary). Both also include simulated experiments. Developed to work together, each tutorial focuses on specific areas of the human body.

Computer Requirements:
Mac: 2MB RAM or higher

Human Body I — Focuses on the human body, digestion, respiration, circulation, and excretion.

HUMAN ANATOMY

Single copy: BTH1 $45.00 (school price)
Lab Pack (10): BTH1L $180.00 (school price)
Site license: BTH1N $270.00 (school price)

Human Body II — Focuses on bones and muscles, the nervous system, and reproduction.
Single copy: BTH2 $45.00 (school price)
Lab Pack (10): BTH2L $180.00 (school price)
Site license: BTH2N $270.00 (school price)

Age Range: Grades 9 – 12

BODY WORKS

Softkey International
Tel: (800) 227-5609
Fax: (404) 427-1150

Computer Program
Price: $69.95

The Body Works is a fascinating computer program that explores the body's systems, structure and functions. Colorful, comprehensive graphics guide the student on a journey through the entire body. A vast database allows for a detailed examination of every facet of the human body, from head to toe.

Computer Requirements:
Mac: 4MB RAM or higher, with hard drive
System 6.0.7 or higher
Color monitor with 256 color capability
System 7 compatible
IBM: PC or 100% compatible
520K RAM
DOS 3.3 or higher
Hard drive with 8.5MB free memory available
Sound blaster card recommended but not required
Windows: Version 3.1 or higher
4MB RAM
Hard drive with 8MB free memory available
VGA display
Sound blaster card recommended but not required

This program is also available on CD-ROM

Age Range: Grade 7 – College

BODYMAPPER

4FCK-603-A
Intellimation
Tel: (800) 346-8355/(805) 968-2291
Fax: (805) 968-8899

Computer Program
Price: $49.00

The interactive cross-curricular program that teaches graphing and measurement skills.

TAG Development Ltd.

Explore the concept of "myself" with Bodymapper, an interactive program that teaches students about themselves and their bodies. Your students will read, write, and learn about their body parts, systems, and functions as each area of the body is displayed pictorially. Once students learn about their bodies, they can compile, collect, and analyze their own personal data such as height, weight, eye color, favorite color and more. The data is stored in an easy-to-use database and can even be carried over from year to year. Once the data is compiled, you can create comparative graphs for your whole class to analyze the enjoy. A drawing tool also lets students draw their own self portrait.

Media Methods Awards Portfolio 1993

Computer Requirements:
Mac: 2MB RAM — System 6.0.5 or higher
HyperCard 2.0 or higher
System 7 compatible

Single copy: 5CKF-1229-A $49.00
Site license: 5CKF-1229-C $219.00

Bodymapper — Spanish Version:
Single copy: 5CKF-787-A $49.00
Site license: 5CKF-787-C $219.00

Age Range: Grades 3 – 6

DELTA SCIENCE MODULE™: YOU AND YOUR BODY

738-2616
Delta Education, Inc.
Tel: (800) 442-5444
Fax: (800) 282-9560

Activity Set w/Teacher's Guide
Price: $225.00

The students in your class will learn about all of the body systems as they build models of bones and muscles, and conduct experiments on skin, senses and nutrition. The kit includes 4 weeks of activity materials and a Teacher's Guide.

5D-438-2619 Teacher's Guide only $9.95
5D-738-2968 Refill Kit $73.15

Age Range: Grades 5 – 6

INTERNAL ORGANS

A56
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $310.00

This exclusive vinyl plastic presentation depicts the pancreas, duodenum, gallbladder, spleen and kidneys with adrenals, clustered in their natural anatomical relationship, but scaled to three times life-size for ease of observation.

Dissections of the pancreas, duodenum, and gallbladder let you trace the pancreatic, cystic and bile ducts.

Major blood vessels including the portal vein are depicted.

59 hand-numbered structures are defined in the accompanying key. Measuring 12 x 15 x 5 inches (30 x 38 x 13 cm), the model pivots on a hardwood stand.

Age Range: High School - College

GRAY'S ANATOMY: A FACT FILLED COLORING BOOK

Ward's Biology
Tel: (800) 962-2660
Fax: (800) 635-8439

Book
Price: $8.95

An educational coloring book on anatomy designed for middle and high school biology students. Contains 60 pages of illustrations with accompanying text on all systems of the human body. Softcover, 128 pages.

Age Range: Grades 7 – 12

HUMAN ANATOMY

MAN: THE INCREDIBLE MACHINE

51255
National Geographic Society
Tel: (800) 368-2728

Video 60 min
Available for Loan
Price: $79.00

This is a powerful, award-winning photographic journey through the human body as seen from the inside. The viewer tours the interior of the heart, witnesses valve movements, travels the network of blood vessels, and observes the intricate construction of the skeleton and joints.

Age Range: Grade 7 – College

THE LIVING BODY

Films for the Humanities and Sciences
Tel: (800) 257-5126

Videos 26 min. avg.
Price: $89.95 each/$2,249.00 set

This unique series is composed of 26 exciting videotapes that illustrate every function of the human body, from the senses to cell duplication to muscle power. The films take the viewer inside the body to watch how the different systems work and interact. The videos are both informative and entertaining. For example, "Life Under Pressure" shows metaphorically how the water system of a small Italian village can be compared to the human circulatory system.

Age Range: High School – College

THE NEW LIVING BODY

Films for the Humanities and Sciences
Tel: (800) 257-5126
Fax: (609) 275-3767

Videos
Price: $949.00 for 10-part series

This is a major series from the producers of the original LIVING BODY series. Each program contains:

- Live action video showing the human body in action
- The most up-to-date imaging technology is used to provide unparalleled glimpses into the inner workings of the body
- Three-dimensional computer graphics provide easy-to-understand illustrations of processes and functions
- Each program comes with a comprehensive Teacher's Guide

The series includes videos on:

- Bones and Joints
- Muscles
- Skin
- Breathing
- Blood
- The Brain
- Digestion
- The Senses
- Homeostasis
- Reproduction: Designer Babies

Age Range: High School-College

SYSTEMS OF THE HUMAN BODY VIDEOS (COMPLETE SET)

C9621-VHS
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Videos — Set of 7 5 min. approx.
Available as Set
Available Individually
Price: $24.95 each/$156.45 set

Series of 7 single-concept videos are fully color-enhanced. Presents basic anatomical information in a concise format.

C9622-VHS — Passage of Food Through the Digestive Tract
X-Ray images augmented with a "working" model of the human digestive system show how food passes through each stage of digestion.

C9623-VHS — The Heart and Circulation
Illustrates the relationship between pulse, flow of blood, and the heart. Includes dramatic footage of open heart surgery.

C9624 — Lung Action and Function
Explains the functions of the lungs and details the interrelatedness of differing body systems.

C9625-VHS — Liquid Waste and the Kidney
Kidney functions are clarified using animation.

C9626-VHS — Respiration and Waste
Live and animated sequences are used to portray respiration processes.

C9627-VHS — Skeletal and Muscle Action
X-Ray is used to photograph bones and muscles during movement.

C9628-VHS — Fertilization
Overview of structure and function of reproductive organs includes footage of actual fertilization and formation of fertilization membrane.

Age Range: Grades 8 – 12

SYSTEMS OF THE HUMAN BODY (COMPLETE SET)

A5VH 1063
Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

Videos — Set of 7 5 min. avg.
Available as Set
Available Individually
Price: $30.00 each/$200.00 set

You will love these class-starter videos as they provide fascinating footage relating to human biology. Available separately or as a group, each contains just enough material to spark students' interest in a topic.

A5VH 1056 — Fertilization
Watch the incredible footage of a sperm penetrating an egg and show the roles male and female reproductive organs play in the process of fertilization.

A5VH 1057 — The Heart and Circulation
Dramatic footage of open heart surgery is used to explain the relationship between blood and the heart. It thoroughly illustrates the heart's pumping action.

A5VH 1058 — Liquid Waste and the Kidney
Animated sequences follow the path of urine through the body. This program explains the function of the kidneys as well as the relationship between liquid wastes and the internal body processes.

HUMAN ANATOMY

A5VH 1059 — Lung Action and Function
Follow the expansion and collapse of the lungs as this program delves into the mechanics of breathing and the various body parts that are involved.

A5VH 1060 — Passage of Food through the Digestive Tract
A "working" model and X-ray pictures show students how food travels through each section of the digestive system.

A5VH 1061 — Respiration and Waste
Live and animated sequences show how oxygen and food are taken in and converted into energy through respiration. Students will see how carbon dioxide and water are then released as waste products.

A5VH 1062 — Skeletal and Muscle Action
X-ray photography allows students to see bones and muscles working in action. They will see how the relationship between bones and muscles allows us to move.

Age Range: Grades 7 – 12

TELL ME WHY: ANATOMY AND GENETICS

ABM013-CV
Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

Video w/Teacher's Guide 30 min
Price: $22.00

This original and highly educational volume of the acclaimed "Tell Me Why" series is sure to motivate your students to study the human body. Questions such as: "What makes our muscles tired?," "Why do we have two nervous systems?" and "Why are some people left-handed?" will be answered. Locator numbers on the video enable easy access to any topic. The teacher's guide includes questions for discussion, a glossary, and suggested teaching strategies.

Topics include the following: Skin, Muscles, Sleep, Brain, Breathing, Eyes, Teeth, Ears, Heart, Genes

Highest Rating - Children's Video Magazine

Age Range: Grades 5 – 9

THE BASIC HUMAN ANATOMY SERIES

Teaching Films
Tel: (800) 421-2363
Fax: (708) 328-6706

Films
Price: $295.00 each/$1,650.00 set

Ideal for use in any course, these programs are especially valuable in courses where students may not have the chance to see or dissect a cadaver. The body regions are demonstrated on a live person, embalmed and unembalmed specimens, and by models, graphics, and X-ray film footage. This series was produced by Instructional Media Services and the Department of Anatomy at the University of Toronto.

1. Upper Extremity (36 min.), #1237
2. Thorax (22 min.), #1238
3. Abdomen and Pelvis (16 min.), #1239
4. Lower Extremety (28 min.), #1240
5. Neuroanatomy (19 min.), #1241
6. Head and Neck (17 min.), #1242

A special series price of $1,650.00 is offered to those who order from this catalog.

This series is also available on Interactive Level One Videodisc with a bar-coded Leader's Guide, at a price of $295 each, or $1,650 for the series.

Age Range: High School A/P – College

THE COLOR ATLAS OF ANATOMY (3RD EDITION)

BK51
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Book
Price: $93.00

The Color Atlas of Anatomy gives a fascinating look at the human body through a unique blend of flawless color photographs of cadaver dissections, CT scans, MR imagery, angiograms, and color illustrations.

Each chapter is divided in two parts. The first follows a systematic presentation. The second explores regional anatomy, following superficial layers with ever deeper layers.

This book is 494 pages and contains 828 photos (753 in full color), 190 illustrations (166 in full color), and 54 radiological images.

Age Range: College

THE HUMAN BODY: STRUCTURE AND FUNCTION

5CKF-536-A
Intellimation
Tel: (800) 346-8355/(805) 968-2291
Fax: (805) 968-8899

Computer Program
Price: $39.00

The HyperCard introduction to nine human anatomical systems.
Jonathan Masters

Using this extensive visual tutorial, students can explore nine systems of the human body. With this helpful study and self-testing tool, the student can access more and more specific information starting from the detailed, unlabeled illustrations of each system. Students will learn the names, structures, functions, and meanings of various parts of the human body. It's a great supplement for basic biology, as well as for the studies of health and disease.

Computer Requirements:
Mac: 1MB RAM or higher
System 6.0.5 or higher
HyperCard 2.0 or higher
System 7 compatible

Single copy: 45CKF-536-A $39.00
Site license: 45CKF-536-C $169.00

Age Range: Grades 6 – 12

HUMAN ANATOMY

THE HUMAN BODY

420-9 (Mac)
421-7 (IBM)
Optical Data Corporation
Tel: (800) 524-2481/(908) 668-0022
Fax: (908) 668-1322

Computer Program
Price: $595.00

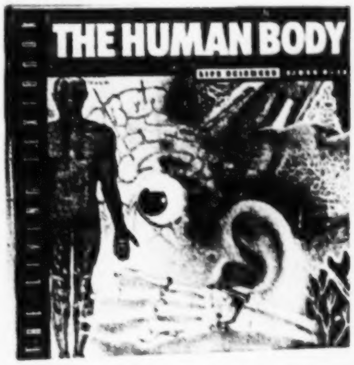
1992, 1993 CPN Districts' Choice
1993 Media & Methods Awards Portfolio

The Human Body brings comprehensive understanding and appreciation of human anatomy and physiology to the classroom. Topics range from the interrelation of the body's major systems to the intricacies of cellular activity.

The program has more than 1,000 still images, including illustrations, photos, imaging, micrographs and dissections. These images enhance the study of cell structure and activity, human development and major systems of the body.

In addition, The Human Body features 150 minutes of movie clips and computer animation highlighting:

- Neural and endocrine control
- Skeletal and cardiovascular systems
- Human defense systems



- Digestion, respiration and excretion
- Reproduction and development

This comprehensive multi-media approach to the wonders of the human body will foster endless classroom discussions on how human biology applies to a broad range of daily health and medical issues.

Program Components:

- Two double-sided videodiscs plus one single-sided videodisc
- Barcoded lesson guides with lesson plans organized by topic, providing a selection of correlated still images and video segments. (Student activity masters include diagrams of all body systems.)
- English and Spanish narration of motion video segments
- Image directories in printed and software formats
- Interactive computer software (Video Cards 3.0 for Macintosh or IBM and Lesson Maker for Macintosh)
- Self-paced training videodisc
- Interface cable for Macintosh or IBM

Hardware Requirements:
Level I (no computer)

- Videodisc player with remote control (barcode reader optional)
- Color TV or video monitor

Level III (with computer)

- Videodisc player with remote control and computer interface (barcode reader optional)
- Color TV or video monitor
- **Mac:** 2MB RAM with hard drive, System 6.0.5 or later (System 7 users need 4MB RAM), HyperCard 2.0 or later (HyperCard Player 2.1, included with Video Cards 3.0, may be used with System 6.0.7 or later)
- **IBM:** PC or 100% compatible, 386SX-25 MHz or better, 4MB RAM, DOS 3.1, Microsoft Windows 3.1, VGA display 640 x 480

Age Range: High School

THE INCREDIBLE HUMAN MACHINE

50506
National Geographic Video
Tel: (800) 221-5200

Video 60 min.
Available for Loan
Price: $19.95

Technology takes you on a journey through the most miraculous place in the world — your body. Explore the intriguing mysteries of human life with this top quality video by National Geographic.

Age Range: Grade 7 – College

THE SYSTEMIC BODY

5CHF-1180-A
Intellimation
Tel: (800) 346-8355/(805) 968-2291
Fax: (805) 968-8899

Computer Program
Price: $39.00

A comprehensive resource for studying anatomy and physiology
John Baro, Stephen Lehmkuhle, Michael Sesma, University of Missouri

Learn the structure and function of the human body with this exciting interactive program. The Systemic Body explores the 10 systems of the human body through superb graphics that give a 3-D "feel" to the study of anatomy and physiology. Self-testing sections are available to reinforce learning. There are nearly 700 linked glossary entries, and search functions allow rapid indexing. The entire program may be customized to suit your needs.

Computer Requirements:
Mac: 2MB RAM or higher
System 6.0.5 or higher
HyperCard 2.1 or higher
System 7 compatible

Single copy: 5CHF-1180-A $39.00
Site license: 5CHF-1180-C $169.00
Student edition: 5CHF-1180-S $7.80

Age Range: High School – College

HUMAN ANATOMY

THE THIN MAN™, SEQUENTIAL HUMAN ANATOMY PROGRAM

TM70
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Chart — Mylar overlays
Price: $395.00

Detailing human anatomy in a way no chart or torso can duplicate, The Thin Man™ is a near life size full-color rendition of the human body which, by means of a sequence of transparent mylar overlays, allows the peeling away of layer after layer of tissue, progressing ever more deeply into the body. This provides extremely valuable insight into the 3-dimensional spatial relationships of principal structures, major vessels and organ systems.

Displayed on the back side of The Thin Man™ is a full-figure view of the skeletal and nervous systems.

Highlighted at each level of the sequential "dissection" are the following features:

1st Layer — Musculature of the head, neck, thorax and abdomen, (superficial muscles on the right side of the figure; deeper muscles and ribs on the left). 30 structures keyed and labeled.

2nd Layer — Brain, thyroid and salivary glands, eye, tongue, teeth, heart and major vessels, lungs, stomach, liver and intestines. 44 structures keyed and labeled.

3rd Layer — Sinuses, nasal septum, heart chambers and vessels, pancreas, spleen, large intestine. 58 structures keyed and labeled.

4th Layer — Esophagus, pleura, aorta, inferior vena cava, intercostal vessels and nerves, autonomic nerve trunk, kidneys and adrenals glands. 27 structures keyed and labeled.

5th Layer (full figure) — Brain, pharynx, vertebral column, rib cage, muscles of upper and lower extremities, pelvic organs and muscles. 77 structures keyed and labeled.

Posterior aspect — Fully detailed skeleton and nervous system. 82 structures keyed and labeled.

In all, well over 200 anatomical features are named, indexed, and keyed.

Standing 63 inches (160 cm) tall, The Thin Man™ is mounted on a warp-proof composition board, and is supported by a tubular steel frame on a tip-proof four-legged stand.

Age Range: Grade 7 – College

THE VISUAL DICTIONARY OF THE HUMAN BODY

BK55
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Book
Price: $19.00

Here is a new kind of dictionary — one that is packed with over 200 vivid, original photographs, graphic illustrations and anatomical labels for every body part.

Each subject, from cell to organ system, is depicted whole in a full-color photograph or illustration. Then it is taken apart — "exploded" — and each component is identified with carefully researched labels.

Use it two ways: If you know what a part of the body looks like but don't know its correct name, flip to the illustration, then turn to the labels surrounding it. If you know an anatomical term but don't know what it refers to, then the comprehensive index will direct you to the illustration that bears the name. The beginning student of anatomy will acquire instant access to a 3,000-word vocabulary of human anatomy with this creative reference.

This hardbound visual dictionary (copyright 1991) measures 10 1/2" x 12 1/2" (26 x 32 cm), is printed in full color, and is 64 pages.

Age Range: Grades 7 – 12

UNDERSTANDING SYSTEMS OF THE HUMAN BODY

CDL Software Shop
Tel: (800) 637-0047/(617) 890-4640
Fax: (617) 890-2894

Computer Program
Price: $44.95

For students functioning below grade level, this series presents the systems of the human body in a comprehensive, highly teachable format. This program introduces the circulatory, nervous, excretory, skeletal, and muscular systems as well as the concepts of ingestion and digestion. Lessons are divided according to key ideas and include games and activities. The programs are at a third grade reading level, with content of interest from fifth through twelfth graders.

Computer Requirements:
Apple: 64K (PRQ0633A)
IBM: 128K (PRQ0633I)
Mac: 512K (PRQ0633M)
Labpack (5 disks): $89.95

Site license and network available.

Age Range: Grades 5 – 12

INVERTEBRATES-GENERAL

INHABITANTS OF PLANET EARTH: INVERTEBRATES

Ward's Biology
Tel: (800) 962-2660
Fax: (800) 635-8439

Videos
Price: $269.00 for set of six

These six videos of invertebrates will be sure to hold students' attention and provide them with a complete overview of these fascinating animals.

- **Flatworms**
  This program looks at the various kinds of flatworms, from the planarians to tapeworm, showing their amazing powers of regeneration. Live action; 10 minutes.
- **Mollusks**
  This video explores a clam's circulatory system and basic cephalopod features on a hatching octopus. Live action; 10 minutes.
- **Echinoderms**
  Exciting footage helps students learn the structure and function of starfish, sand dollar, sea urchin and sea cucumber. Live action; 10 minutes.

INVERTEBRATES-GENERAL

PERCH DISSECTION

- **Annelids**
  An integral part of any biology curriculum, this program explores the life cycles and adaptations of segmented worms. Live action; 10 minutes
- **Colenterates**
  Show this program before you start your lab on feeding behavior of the hydra for an excellent introduction to Coelenterates. Live action; 10 minutes
- **Arthropods**
  This program fully communicates the breadth of this phylum. From hairy centipedes and millipedes to black widow spiders that spin cocoons, these seemingly unrelated animals are connected by their common feature: jointed feet. Live action; 10 minutes

Age Range: Grades 7 – 12

THE INSECT WORLD

Ventura Educational Systems
Tel: (800) 336-1022
Fax: (805) 473-7382

Computer Program
Price: $59.95

By using the tutorials in this program, students learn that there are many different types of insects. The lessons cover the insect's basic body parts: exoskeleton, head, thorax, abdomen, and internal systems. Students will find the information on how insects survive fascinating.

This program includes:

1. A special program called "The X-ray Machine" for viewing a grasshopper's:
   - Internal structures
   - Respiratory system
   - Nervous system
2. Instant retrieval of detailed anatomical information
3. An interactive tutorial on the metamorphosis of a butterfly
4. Vocabulary-building quizzes
5. Complete computerized glossary of science terms
6. Comprehensive Teacher's Guide and reproducible worksheets

Computer Requirements:
Apple: 2E or higher
64K/128K for ProDOS version

Lab Pack (5 sets): $109.95
Lab Pack (10 sets): $159.95
Network (30 Stations): $359.95

Age Range: High School

LEARNING ABOUT INSECTS

Cambridge Development Laboratory
Tel: (800) 637-0047
Fax: (617) 890-2894
Computer Program

Price: $144.95
Labpack: 5 disks, $434.95

This comprehensive, multimedia presentation focuses on: insect body structure and function; insect life cycles; and defenses against enemies. Featuring outstanding and intricate live action cinematography, it explains the three body sections found on all adult insects and explores how different leg and wing designs affect the insect's movements. The compound eye and various insect mouths are also covered. The live action video segments catch several insects in the act of defending themselves, such as the minx beetle, who gives off an offensive odor to ward off birds, or caterpillars dropping to the ground and playing dead.

A great introduction to insect biology.

Age Range: Grades 5 – 10

ANATOMY OF A FISH

Ventura Educational Systems
Tel: (800) 336-1022
Fax: (805) 473-7382

Computer Program
Price: $59.95

Basic anatomical structures and functions are the subject of this interesting program which covers external, internal and skeletal structures of bony fish. Students learn how various parts work together to support life.

The program provides graphically illustrated lessons that present basic information on the topic. It contains a database of structures and functions linked to the graphic that allows students to investigate the parts of the animals, and to retrieve detailed information about the biological function of a particular structure.

Word games in the program are designed to help students learn to identify anatomical structures and associated biological functions, and to learn the special vocabulary that pertains to marine biology.

The program also presents a series of quizzes that generate multiple choice and true/false questions based on the lessons. This permits students to self-test and reinforces learned material.

A teacher's guide with worksheets that support the computer-based activities is included.

Computer Requirements:
Mac: LC or higher — 1MB RAM
Apple: 2E or higher — 64K/128K for ProDOS version
IBM: PC or 100% compatible — 512K w/CGA graphics

Lab Pack (5 sets): $109.95
Lab Pack (10 sets): $159.95
Network (30 Stations): $359.95

Age Range: Grade 7 and higher

BIOLOGY CHART SERIES – PERCH

1889
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Chart
Available as Set
Available Individually
Price: $49.00/$64.00

The central figure illustrates a complete dissection of this typical bony fish. Additional figures show the structure of the gill arch, a horizontal section through the head, caudal vertebra and the four fish scale types.

To Order Single Charts:
Specify catalog number shown plus appropriate suffix to indicate your choice of mounting option.

PERCH DISSECTION

For Single Charts with Hang-up Mount: Add suffix (-10) to catalog number. Chart is mounted with rods top and bottom with loops for hanging. $49.00 each.

For Single Charts with Spring Roller Mount: Add suffix (-14) to catalog number. Chart is mounted with individual spring roller attached to steel backboard. $64.00 each.

Age Range: Grade 8 – College

BIOLOGY DISSECTIONS – PERCH

Cross Educational Software
Tel: (800) 768-1969/(318) 255-8921

Computer Program
Available as Set
Available Individually
Price: $29.95

This dissection guide was written and classroom tested by a high school teacher. The software is fully capable of replacing animal dissection in the classroom.

The program has 15 to 30 pictures and can be used several ways. It teaches vocabulary by giving the definitions and functions of the body structures together with pictures. It can go through a step-by-step dissection with all the safety warnings and techniques. It can also be used for self-testing. Approximately 50 to 100 questions are included with the dissection guide: true-false, multiple choice, and matching the organ names with pictures.

The Apple version is copy-protected with a free back-up disk included. 5 1/4 inch disks are standard unless otherwise requested.

The IBM/Tandy version requires CGA or better graphics. Both large and small disks are included in the package.

The Macintosh program will display color if you have it.

Computer Requirements:
Apple (CR-096): 48K
IBM (CR-135): 512K
Mac (CR-216): 1MB

Age Range: High School

DISSECTION VIDEO SERIES II – PERCH

L5VH-1222
Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

Video w/Teacher's Guide 13 min.
Available as Set
Available Individually
Price: $100.00

Capable of replacing dissection labs, this program provides a clear and detailed presentation of the external anatomy of the specimen, the correct procedures used for dissection, and a review of the internal anatomy and physiological systems. The video is accompanied by a dissection manual and a written examination.

Age Range: Grades 7 – 12

DISSECTOGRAMS – PERCH

C2194
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Cards - Set of 4, 19" x 11"
Available as Set
Available Individually
Price: $19.90

Four large 19" x 11" laminated cards depict the relevant anatomic features of the perch. Students are guided step-by-step through the dissection process, reducing the frustration of misunderstanding and mistakes. This Dissectogram can also be used in combination with Hubbard's three-dimensional zoology models in lieu of using animal specimens. It depicts correct dissection procedures, necessary dissection tools, and proper scientific terminology. An exceptional aid for reviewing information, this product will dramatically improve your students' zoology knowledge.

Age Range: High School – College

LABORATORY ANATOMY OF THE PERCH

S51353
Fisher-EMD
Tel: (800) 955-1177/(312) 378-7770
Fax: (312) 378-7174

Book
Price: $27.45

This manual, by Robert B. Chiasson, contains 53 pages with 40 drawings. It is printed in large format and spiral bound.

Age Range: High School – College

PERCH MODEL ACTIVITY SET

C2754
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Model, Guide, Color Transparency
Available as Set
Available Individually
Price: $89.25

Introduce your students to anatomy with this model shown in raised relief. Each model illustrates internal structures in graphic detail and is capable of replacing the use of animal specimens in the classroom.

Students can view the special adaptations of an aquatic vertebrate for exchanging oxygen and carbon dioxide. All organ systems are graphically illustrated in 3-D, plus two inset diagrams of gas exchange in the gills and the complete skeletal system.

Activity set includes a 24" W x 18" H raised relief model, detailed activity guide and color transparency.

Age Range: Grades 8 – 12

PERCH DISSECTION

THE CONCISE PERCH DISSECTION CHART

BioCam Communications, Inc.
Tel: (800) 667-3316
Fax: (800) 668-2279

Chart
Available as Set
Available Individually
Price: $4.50

This 8 1/2" x 11" chart uses high quality photography and microphotography to depict the complete dissection of the perch. It is printed on both sides of stiff card stock. A plastic sleeve is provided for protection when not in use.

The price is reduced to $3.95 each when ordering 10 or more in any combination.

In Alaska, call collect at (604) 768-4242, or fax at (604) 768-7679.

Age Range: Grades 8 – 12

THE PERCH: A TECHNOLOGICAL DISSECTION

Science Works, Inc.
Tel: (910) 712-0353

Computer Program
Price: $99.95
CD $59.95

Finally, a truly workable alternative to animal dissection that goes way beyond supplementary pre- or post-lab use. This new and exciting program was developed by four master science teachers. Using cutting-edge technology, digitized photographs of real animals will enable your students to electronically "dissect" the specimen right on the computer.

In classroom tests across the U.S.A. and Canada, students and teachers alike have praised this software for its accuracy and ease of use. It is without equal in reinforcing student learning and observation in a way that lab work cannot — students can work at their own pace, they can make up for missed classes, and the dissection can be repeated as many times as necessary, all at no additional cost! And, it is without the inherent dangers and discomforts associated with the cutting and handling of actual animal specimens.

This program is a time-saver, a cost-saver, and has outstanding potential as a learning tool in any school teaching biology, anatomy, or the life sciences.

This module contains two disks that are duplicatable for backup, and is available separately or as part of a series. Special combination packages and network versions are available at significant savings.

Computer Requirements:
Mac: 4MB RAM or higher, with hard drive
System 6.0.7 or higher
Color monitor
System 7 compatible
IBM: PC or 100% compatible
640K RAM
DOS 3.3 or higher
MCGA graphics
Mouse

Age Range: High School – College

RAT DISSECTION

DISSECTION VIDEO SERIES II – RAT

L5VH-1224
Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

Video w/Teacher's Guide 31 min.
Available as Set
Available Individually
Price: $160.00

Capable of replacing dissection labs, this program provides a clear and detailed presentation of the external anatomy of the specimen, the correct procedures used for dissection, and a review of the internal anatomy and physiological systems. The video is accompanied by a dissection manual and a written examination.

Age Range: Grades 7 – 12

THE CONCISE RAT DISSECTION CHART

BioCam Communications, Inc.
Tel: (800) 667-3316
Fax: (800) 668-2279

Chart
Available as Set
Available Individually
Price: $4.50

This 8 1/2" x 11" chart uses high quality photography and microphotography to depict the complete dissection of the rat. It is printed on both sides of stiff card stock. A plastic sleeve is provided for protection when not in use.

The price is reduced to $3.95 each when ordering 10 or more in any combination.

In Alaska, call collect at (604) 768-4242, or fax at (604) 768-7679.

Age Range: Grades 8 – 12

RAT DISSECTION

Ward's Biology
Tel: (800) 962-2660
Fax: (800) 635-8439

Model
Price: $165.00

This model has been molded from an actual specimen to produce a dissection that is very lifelike, making it easier for your students to understand the animal's anatomy. Each of the important structural details are included, and the heart, lungs, liver, stomach, and intestines are removable for greater examination. The 6" x 12" x 4" model is mounted on a black plastic base and comes with an illustrated Key Card to identify 25 parts.

Age Range: Grades 7 – 12

DISSECTION & ANATOMY OF THE RAT

S17618H
Fisher-EMD
Tel: (800) 955-1177/(312) 378-7770
Fax: (312) 378-7174

Video 30:31 min.
Available as Set
Available Individually
Price: $167.00

You will have a powerful tool at your fingertips when you bring this educational videotape of an actual rat dissection into your classroom. This video is a versatile teaching

SHARK DISSECTION

aid and can be used as an alternative to an actual dissection.

The video presents students with a close-up view of the special procedures used for dissecting the rat. It graphically details the external anatomy of the rat. Then, proper dissection techniques are followed by a comprehensive review of the internal anatomy and physiology. A series of specific review questions is included.

Each video comes with a protective storage case.

Age Range: High School – College

ANATOMY OF A SHARK

Ventura Educational Systems
Tel: (800) 336-1022
Fax: (805) 473-7382

Computer Program
Price: $59.95

External, internal and skeletal structures of the shark are the focus of this information-packed program. By using it, students will gain an in-depth understanding of anatomical structures and the related biological functions.

The program provides graphically illustrated lessons that present basic information on the topic. It contains a database of structures and functions linked to the graphic that allows students to investigate the parts of the animals, and to retrieve detailed information about the biological function of a particular structure.

Word games in the program are designed to help students learn to identify anatomical structures and associated biological functions, and to learn the special vocabulary that pertains to marine biology.

The program also presents a series of quizzes that generate multiple choice and true/false questions based on the lessons. This permits students to self-test and reinforces learned material.

A teacher's guide with worksheets that support the computer-based activities is included.

Computer Requirements:
Mac: LC or higher — 1MB RAM
Apple: 2E or higher — 64K/128K for ProDOS version
IBM: PC or 100% compatible — 512K w/CGA graphics

Lab Pack (5 sets): $109.95
Lab Pack (10 sets): $159.95
Network (30 Stations): $359.95

Age Range: Grade 7 and higher

DISSECTION & ANATOMY OF THE SHARK

S176181
Fisher-EMD
Tel: (800) 955-1177/(312) 378-7770
Fax: (312) 378-7174

Video 25:34 min.
Available as Set
Available Individually
Price: $167.00

You will have a powerful tool at your fingertips when you bring this educational videotape of an actual shark dissection into your classroom. This video is a versatile teaching aid and can be used as an alternative to an actual dissection.

The video presents students with a close-up view of the special procedures used for dissecting the shark. It graphically details the external anatomy of the shark. Then, proper dissection techniques are followed by a comprehensive review of the internal anatomy and physiology. A series of specific review questions is included.

Each video comes with a protective storage case.

Age Range: High School - College

DISSECTION VIDEO SERIES II – SHARK

L5VH-1225
Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

Video w/Teacher's Guide 26 min.
Available as Set
Available Individually
Price: $160.00

Capable of replacing dissection labs, this program provides a clear and detailed presentation of the external anatomy of the specimen, the correct procedures used for dissection, and a review of the internal anatomy and physiological systems. The video is accompanied by a dissection manual and a written examination.

Age Range: Grades 7 – 12

LABORATORY ANATOMY OF THE SHARK

S51354
Fisher-EMD
Tel: (800) 955-1177/(312) 378-7770
Fax: (312) 378-7174

Book
Price: $27.45

This manual, by Laurence M. Ashley, contains 96 pages with 39 drawings. It is printed in large format and spiral bound.

Age Range: High School – College

PREGNANT SHARK MODEL

Ward's Biology
Tel: (800) 962-2660
Fax: (800) 635-8439

Model
Price: $325.00

Three-dimensional dissection model illustrates major anatomical features, specially designed to display pup with yolk sac in uterus. Also shows mouth and pharynx, dorsal view of the eyes, brain and cranial nerves, brachial circulation, ventral view of the viscera and circulatory vasculature, and trunk musculature in lateral and cross-sectional views. Size: 19 1/2"L x 7 1/2"W.

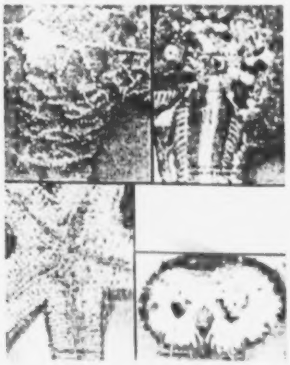
Age Range: Grades 7 – 12

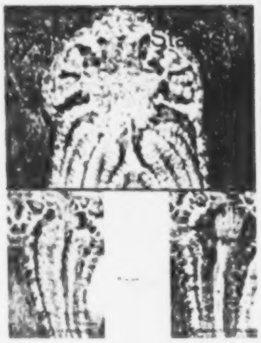
STARFISH DISSECTION

THE CONCISE STARFISH DISSECTION CHART

BioCam Communications, Inc.
Tel: (800) 667-3316
Fax: (800) 668-2279

Chart
Available as Set
Available Individually
Price: $4.50





This 8 1/2" x 11" chart uses high quality photography and microphotography to depict the complete dissection of the starfish. It is printed on both sides of stiff card stock. A plastic sleeve is provided for protection when not in use.

The price is reduced to $3.95 each when ordering 10 or more in any combination.

In Alaska, call collect at (604) 768-4242, or fax at (604) 768-7679.

Age Range: Grades 8 – 12

BIOLOGY DISSECTIONS – STARFISH

Cross Educational Software
Tel: (800) 768-1969/(318) 255-8921

Computer Program
Available as Set
Available Individually
Price: $29.95

This dissection guide was written and classroom tested by a high school teacher. The software is fully capable of replacing animal dissection in the classroom.

The program has 15 to 30 pictures and can be used several ways. It teaches vocabulary by giving the definitions and functions of the body structures together with pictures. It can go through a step-by-step dissection with all the safety warnings and techniques. It can also be used for self-testing. Approximately 50 to 100 questions are included with the dissection guide: true-false, multiple choice, and matching the organ names with pictures.

The Apple version is copy-protected with a free back-up disk included. 5 1/4 inch disks are standard unless otherwise requested.

The IBM/Tandy version requires CGA or better graphics. Both large and small disks are included in the package.

The Macintosh program will display color if you have it.

Computer Requirements:
Apple (CR-093): 48K
IBM (CR-137): 512K
Mac (CR-214): 1MB

Age Range: High School

DISSECTION & ANATOMY OF THE STARFISH

S17618J
Fisher-EMD
Tel: (800) 955-1177/(312) 378-7770
Fax: (312) 378-7174

Video 8:35 min.
Available as Set
Available Individually
Price: $168.00

You will have a powerful tool at your fingertips when you bring this educational video tape of an actual starfish dissection into your classroom. This video is a versatile teaching aid and can be used as an alternative to an actual dissection.

The video presents students with a close-up view of the special procedures used for dissecting the starfish. It graphically details the external anatomy of the starfish. Then, proper dissection techniques are followed by a comprehensive review of the internal anatomy and physiology. A series of specific review questions is included.

Each video comes with a protective storage case.

Age Range: High School – College

DISSECTION VIDEO SERIES I – STARFISH

L5VH-1217
Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

Video w/Teacher's Guide Approx. 30 min.
Available as Set
Available Individually
Price: $70.00

This high quality video illustrates a start-to-finish dissection. Utilizing the most up-to-date equipment and techniques, the video follows every step of the dissection process. Following the organization of most lab manuals, this program can be used as a replacement for animal dissection. Full-color close-ups correlate to a careful narrative to make it easy for students to follow along. Especially difficult-to-locate anatomical structures are identified by graphics and pointers. This program is accompanied by a printed script with numbered frame references and a complete glossary.

Age Range: Grades 7 – 12

STARFISH DISSECTION

STARFISH

Ward's Biology
Tel: (800) 962-2660
Fax: (800) 635-8439

Model
Price: $48.95

This model will show your class all they need to know about starfish structure, easily and economically. The five-armed specimen illustrates over 10 different features including tube feet, cardiac stomach, rectal caeca, gonad, and digestive gland. Three of the arms have been dissected at three levels, providing details of internal anatomy from various perspectives. The central disc has been dissected as well, revealing even more of the inner structure. The model measures 22" x 16" and is mounted on a fully keyed plaque which identifies 12 structural details.

Age Range: Grades 7 – 12

STARFISH MODEL

Ward's Biology
Tel: (800) 962-2660
Fax: (800) 635-8439

Model
Price: $149.00

Life-Sized Model with Cross-Sectioned Arm

This three-dimensional model is cast from an actual specimen, so that all of nature's detail is clearly captured. It can be handled and examined from all sides. Shows all the internal and external features and textures of a real specimen. Three rays are dissected, showing fine details of the digestive and reproductive systems as well as the water vascular system. The fourth ray is cross-sectioned to show the digestive glands and coelom. Includes key card which identifies over 25 anatomical features. Made of a unique material for durability and flexibility. Actual length, 10".

Age Range: Grades 7 – College

BRAIN AND SPINAL CORD

ANAMOD – BRAIN

C13002
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Model
Available as Set
Available Individually
Available for Loan
Price: $10.95

Anamods are anatomical models printed in full color on durable vinyl. Each organ model is made up of die-cut pieces that easily fit together to create a detailed 3-D model. Anamods are number-coded and keyed to a comprehensive Teacher's Guide, included with each model. An attractive plastic stand is also included with each Anamod.

Age Range: Grade 7 – College

COMPARATIVE VERTEBRATE BRAINS

C13023
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Model
Available as Set
Available Individually
Available for Loan
Price: $15.75

These comparative models emphasize the dramatic changes that have occurred in the development of the hearts and brains of fish through mammals. Each organ model, printed on durable vinyl, provides a detailed 3-D view of the organ as it evolved. This set includes both Vertebrate Hearts and Vertebrate Brains. Each includes five models and a plastic stand to display the set.

Age Range: Grade 7 – College

BASE OF HEAD AND BRAIN

A69
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $412.00

This full size unbreakable vinyl model portrays the base of the human head, in which an extremely detailed brain, complete with arterial blood supply, cranial nerves, and dissectible brain stem, rests in its natural position.

The entire brain can be lifted out, exposing the vault of the skull, fossae, foramen magnum and smaller foramina. The dura mater has been removed from the left half of the vault. Dissections of the anterior fossa and the petrous portion of the temporal bone expose the eyeball, its muscles, lacrimal gland, optic nerve, and the middle and inner ear. The brain can be dissected into six parts. The right cerebral hemisphere divides along its length following the border of the corpus callosum, while the left can be split to expose the posterior horn of the lateral ventricle and the hippocampus. The entire left half of the brain stem can be detached.

In total, 107 features are hand numbered on the brain and tabulated in the accompanying key. The overall dimensions of this model are 9 x 8 x 12 inches (23 x 20 x 30 cm).

Age Range: High School – College

BRAIN AND SPINAL CORD

DELUXE NEUROVASCULAR SKULL WITH 8-PART BRAIN

Denoyer Geppert
Tel: (800) 621-1014
Fax: (773) 561-4160

Model
Price: $531.00

Not subject to the visual limitations of 2-dimensional charts and diagrams, this fully-dissectible, 3-dimensional Neurovascular Skull delivers more meaning to neurocranial studies, with greater comprehension.

Distributed over the exterior and cranial floor of this medical-quality skull are the principal arteries and nerves-including 12 cranial nerves and their branches — arteries on the left half; nerves on the right. Nerves are color-coded yellow; arteries red.

Nested in the cranium is our unique life-size 8-part brain, cast from a very soft, resilient material which deforms and feels like real tissue. Medially sectioned, the left and right hemispheres of the realistic brain each divide into 4 segments:

- Frontal/parietal lobes
- Temporal lobe/occipital lobe half
- Brain stem half
- Cerebellum half

This skull measures 10 x 7 x 5 inches.

Age Range: High School – College

DISSECTION & ANATOMY OF THE BRAIN

S17618K
Fisher-EMD
Tel: (800) 955-1177/(312) 378-7770
Fax: (312) 378-7174

Video
Available as Set
Available Individually
Price: $155.00

You will have a powerful tool at your fingertips when you bring this educational videotape of an actual brain dissection into your classroom. This video is a versatile teaching aid and can be used as an alternative to an actual dissection. The video presents students with a close-up view of the special procedures used for dissecting the brain. Proper dissection techniques are followed by a comprehensive review of the internal anatomy and physiology. A series of specific review questions is included.

Each video comes with a protective storage case.

Age Range: High School – College

DISSECTION VIDEO SERIES II – SHEEP BRAIN

L5VH-1226
Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

Video w/Teacher's Guide 22 min
Available as Set
Available Individually
Price: $150.00

Capable of replacing dissection labs, this program provides a clear and detailed presentation of the external anatomy of the specimen, the correct procedures used for dissection, and a review of the internal anatomy and physiological systems. The video is accompanied by a dissection manual and a written examination.

Age Range: Grades 7 – 12

GIANT FOUR-PART BRAIN

A60
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $335.00

Remarkable size and detail distinguish this unbreakable vinyl replica of the human brain, which divides into four parts to reveal the nature of its internal anatomy as well as its external features. All features are depicted in relief and enhanced through the use of hand painted colors to maximize instructional effectiveness. After lifting the brain from its base, it can be divided initially into hemispheres. 73 features on the left hemisphere have been number coded for ready identification. The right cerebral hemisphere will split in two along a coronal section anterior to the brain stem. 22 features of the right cerebral hemisphere have been hand coded.

Once the right hemisphere has been divided, the right half of the brain stem and cerebellum detach as a unit, exposing 35 features including the entire lenticular nucleus, caudate nucleus, optic tract, corona radiata, fornix, corpus callosum, thalamus, geniculate and quadrigeminal bodies, and the posterior horn of the lateral ventricle.

In all, 130 features, itemized in the accompanying key, are hand numbered on the Giant Brain. All twelve cranial nerves have been lettered with standard Roman numeral notation. The Giant Brain is supported in an upright position on a hoop mounted on an oval base of solid hardwood. Its overall dimensions are 9 x 8 x 12 inches (23 x 20 x 30 cm).

Age Range: High School – College

GIANT FUNCTIONAL BRAIN

A62
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $397.00

Depicting the brain of a right-handed person, contrasting colors and hand-lettered captions locate and identify motor and sensory functional centers, focus on the intellectual role of the dominant left brain, the creative role of the right, and call attention to the emotional, sexual, memory and learning functions of the limbic system.

Sensory regions highlighted include the separate reception and interpretive centers of the visual, acoustic, touch, taste and olfactory senses, plus sensory centers of the somatosensory cortex receptive to more than 20 specific body regions. Among the motor centers presented are 19 body regions

BRAIN AND SPINAL CORD

controlled by the motor cortex, the premotor area, and the motor speech area of Broca. More than 120 hand-numbered features are identified in the accompanying key.

Divisible into four parts, the Giant Brain rests upright on a hoop support on an oval base of finished hardwood. The overall dimensions of this model are 9 x 8 x 12 inches (23 x 20 x 30 cm).

Age Range: High School – College

GIANT HUMAN ANATOMY CHARTS – HUMAN BRAIN

C9510/C9514
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Chart
Available as Set
Available Individually
Price: $49.00/$64.00

This giant-scale chart is an anatomical masterpiece, lithographed in brilliant colors to maximize understanding of the anterior skeletal and muscular systems. Its lifesize three-dimensional views and "transparent" portrayals afford excellent classroom visibility, and make it easier to visualize structural relationships and anatomical complexities. Body contours enhance understanding of positional orientation. A detailed identification key is printed beside each illustration.

This chart measures 44 x 72 inches (112 x 183 cm) and is available individually or as part of a complete set.

To Order Single Charts:
Specify catalog number shown plus appropriate suffix to indicate your choice of mounting option.

For Single Charts with Hang-up Mount:
Add suffix (-10) to catalog number. Chart is mounted with rods top and bottom with loops for hanging. $49.00 each.

For Single Charts with Spring Roller Mount:
Add suffix (-14) to catalog number. Chart is mounted with individual spring roller attached to steel backboard. $64.00 each.

Age Range: High School – College

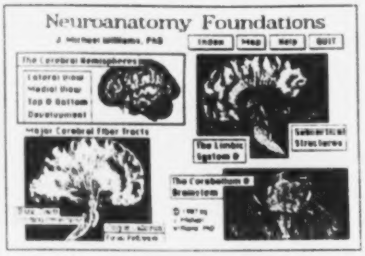
NEUROANATOMY FOUNDATIONS ACADEMIC

5CHF-713-A
Intellimation
Tel: (800) 346-8355/(805) 968-2291
Fax: (805) 968-8899

Computer Program
Price: $59.00 (see below)

A fascinating exploration of the human brain
J. Michael Williams, Hahnemann University

The brain's architecture is presented with detail and clarity through the use of three-dimensional brain dissections, diagrams, clearly labeled brain views, and explanatory text. This program's format gives students the flexibility to pursue specific topics of interest, such as cerebral hemispheres, subcortical structures, cerebellum, brain stem, or major cerebral fiber tracts. This program will complement any science and anatomy curriculum.



Computer Requirements:
Mac: 1MB RAM or higher
System 6.0.5 or higher
HyperCard 2.0 or higher
System 7 compatible

Single copy: 5CHF-713-A $59.00
Site license: 5CHF-713-C $249.00

Age Range: High School – College

INSIDE INFORMATION: THE BRAIN AND HOW IT WORKS

Films for the Humanities and Sciences
Tel: (800) 257-5126
Fax: (609) 275-3767

Video 58 min., color
Price: $149.00
Rental: $75.00

This program explains research on the brain's processes: how individual parts of the brain work, how the brain uses pattern recognition, and which experiments with computer analogs have been successful, which have failed, and why. The program also interviews some of the foremost researchers in the field, including neuroscientist John Hopfield, vision scientist V.S. Ramachandran, and physicist Carver Mead, who had a computer chip that can "see."

Age Range: High School – College

SAGITTAL BRAIN SECTION

A79
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $146.00

An enlarged and very detailed section through the right half of the brain with a portion of the base of the skull depicted in this hand painted, double-sided model. One surface conforms to the median plane and includes a section of the falx cerebri. The reverse surface represents a sagittal cut which exposes the lateral ventricle.

Key structures of the brain and meninges are color coded. In all, 49 features referenced on the model are identified in the accompanying key. The larger-than-life model rests in a detachable stand and measures 10 x 7 x 5 inches (25 x 18 x 12 cm).

Age Range: High School – College

BRAIN AND SPINAL CORD

THE HUMAN BRAIN COLORING BOOK

5117
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Book
Price: $16.00

Developed by internationally recognized neuroscientists and teachers, this book is designed for a wide range of users, from beginners to professionals, and represents state-of-the-art knowledge of the structure and function of the human brain.

Divided into 9 units of study encompassing 140 illustrated plates with matching text on facing pages, each is carefully designed to yield maximum information when colored. Successive plates within each unit progress from basic concepts, suitable for even middle school levels, to those of greater complexity for studies at the undergraduate, graduate and professional levels.

This book comes complete with detailed subject index and step-by-step instructions. It is 302 pages, soft bound, and measures 8 x 11 inches.

Age Range: Grade 7 – College

UNDERSTANDING THE HUMAN BRAIN

LCL593-C
Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

4 Filmstrips w/Teacher's Guide
Avg 15 min. each
Price: $100.00 (set)

Through the use of full-color photography, micro-photography, and the latest in medical imagery, these four filmstrips reveal the depths and mysteries of the human brain. Fact-filled narration and easy-to-understand diagrams enhance and support the image technology and photography.

The following titles are included:

- "Mapping the Brainscape"
- "Tracing the Circuits"
- "Exploring the Mind"
- "The Control Center"

Age Range: Grades 9 – 12

ENDOCRINOLOGY

ENDOCRINE SYSTEM MODEL ACTIVITY SET

C2677
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Model
Available as Set
Available Individually
Price: $89.25

This activity set helps learners understand the structure and function of the endocrine system. Seven endocrine glands are depicted in whole and magnified sectional detail, as well as closely related organs. Included on the model are the pituitary, thyroid, parathyroid, adrenal glands, pancreas, ovaries, and testes.

Activity set includes 24" H x 18" W model, activity guide and a color transparency.

Age Range: Grades 7 – 12

ANAMOD – LIVER

C13010
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Model
Available as Set
Available Individually
Available for Loan
Price: $10.95

Anamods are anatomical models printed in full color on durable vinyl. Each organ model is made up of die-cut pieces that easily fit togethef to create a detailed 3-D model. Anamods are number-coded and keyed to a comprehensive Teacher's Guide, included with each model. An attractive plastic stand is also included with each Anamod.

Age Range: Grade 7 – College

GASTROINTESTINAL

BACHIN/BECK ANATOMICAL CHARTS–DIGESTIVE SYSTEM

S24304
Fisher-EMD
Tel: (800) 955-1177/(312) 378-7770
Fax: (312) 378-7174

Chart
Available as Set
Available Individually
Price: $12.95/$29.95/$71.09

This chart, depicting the human skeletal system, is printed on kimdura, a special high gloss tear-resistant paper designed to last a lifetime. The Desk Size and Poster Size have a rigid vinyl lamination and metal eyelets in each top corner for convenient wall hanging.

The Giant Size is mounted on sturdy wood rods at top and bottom.

To order, attach suffix to item number to indicate size desired:

DL — Desk Size, 11 x 14 inches — $12.95 each
PL — Poster Size, 20 x 26 inches — $29.95 each
GW — Giant Size, 42 x 62 inches — $71.09 each

Age Range: High School – College

DIGESTIVE SYSTEM MODEL ACTIVITY SET

C2673
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Model
Available as Set
Available Individually
Price: $89.25

Introduce your students to anatomy with this model shown in raised relief. The digestive system is shown with details of the mouth, salivary glands, esophagus, stomach, liver, pancreas, and intestines. Learning is enhanced by the cutaway sections and enlargements of the stomach and intestine which further illustrate the system.

Activity set includes a colorful 24" H x 18" W model and activity guide which includes

GASTROINTESTINAL

overhead transparency, Black Line master and teacher developed activities.

Age Range: Grades 7 – 12

FOOD INTO FUEL: OUR DIGESTIVE SYSTEM

L5VH 1079
Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

Video w/Teacher's Guide 22 min.
Price: $90.00

Show your students how the food that we eat everyday is transformed into fuel. This full-motion video gives a thorough explanation of the process of digestion from the role of the enzymes to the various parts of the digestive system: the mouth, teeth, esophagus, stomach, small intestine, large intestine, rectum, liver, gall bladder, and pancreas. It is through this efficient system that food is broken down, nutrients and water absorbed, and wastes removed. The program then goes on to explain the different methods of digestion for carbohydrates, fats, and proteins.

Age Range: Grades 5 – 9

GIANT HUMAN ANATOMY CHARTS – DIGESTIVE SYSTEM

C8910/C8914
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Chart
Available as Set
Available Individually
Price: $49.00/$64.00

This giant-scale chart is an anatomical masterpiece, lithographed in brilliant colors to maximize understanding of the digestive system. Its lifesize three-dimensional views and "transparent" portrayals afford excellent classroom visibility, and make it easier to visualize structural relationships and anatomical complexities. The path of food through the alimentary tract can be easily traced, and cut-away "spotlight" techniques accentuate significant details along the way. A comprehensive identification key is printed beside each illustration.

This chart measures 44 x 72 inches (112 x 183 cm) and is available individually or as part of a complete set.

To Order Single Charts:
Specify catalog number shown plus appropriate suffix to indicate your choice of mounting option.

For Single Charts with Hang-up Mount:
Add suffix (-10) to catalog number. Chart is mounted with rods top and bottom with loops for hanging. $49.00 each.

For Single Charts with Spring Roller Mount:
Add suffix (-14) to catalog number. Chart is mounted with individual spring roller attached to steel backboard. $64.00 each.

Age Range: High School – College

INTESTINAL VILLI

A52
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $228.00

This vinyl model enhances student comprehension of the process of digestion and nutrient absorption by portraying three of the more than 5 million villi which line the small intestine.

One villus is shown intact. One of the remaining two is sectioned to reveal its network of arterioles and venules. The other is sectioned to show its lymphatic vessels.

A "Spotlight view" depicts a highly magnified crypt of Lieberkuhn which secretes digestive juice.

The model measures 10 x 16 x 4 inches (25 x 41 x 10 cm), and the accompanying key identifies 23 numbered structures.

Age Range: High School – College

LIFE-SIZE 5-PART DIGESTIVE SYSTEM

A93
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $552.00

Completely resculpted with enhanced anatomical detail, our life-size vinyl-plastic model replicates the entire alimentary tract from mouth to anus.

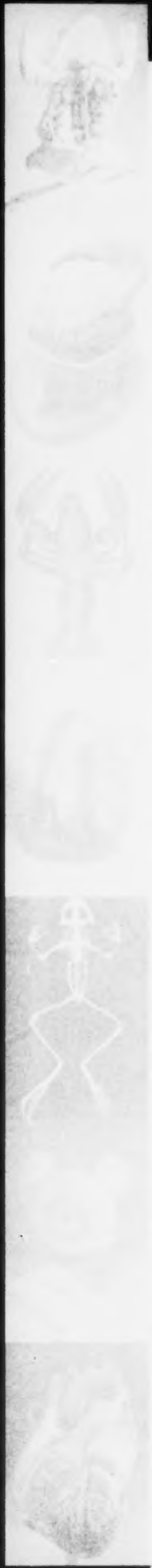
New and improved detailing includes:

1. Detachable lower jaw half complete with teeth, muscles of mastication and salivary glands.
2. Dissected pancreas exposing the panceatic and common bile ducts.
3. Duodenum sectioned open to reveal the hepatopancreatic ampulla (common entrance of the main pancreatic duct and common bile duct), and the entrance of the accessory pancreatic duct.
4. Dissection of the terminal portion of the ileum and cecum showing the ileocecal valve and the orifice of the vermiform appendix.
5. Section through the rectum, anal canal and anus to reveal the anal columns and anal sphincter.

Additional features include detachable liver with gallbladder and hepatic duct dissected open; color-coded vessels and ducts; detachable stomach which shows circular, longitudinal and oblique fibers of its muscular wall, and which divides into halves to reveal its folded mucosa (rugae), entrance of the esophagus, and pyloric valve.

All features are number-coded for identification in the accompanying key. Mounted on a finished hardwood base, the Digestive System measures 36 x 11 x 6 inches (91 x 28 x 15 cm) overall.

Age Range: High School – College



GASTROINTESTINAL

LIFE-SIZE TWO-PART STOMACH

A50
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $115.00

This flexible vinyl replica of the human stomach is anatomically correct in size, features and form. Contrasting colors have been selectively employed, making subtle features easier to identify and enhancing the teaching value of this model.

External detail includes the gastric artery and the gastric nerve plexus. Dissections of the stomach wall, at progressively deeper levels, expose its muscle layers. The stomach can be divided into halves.

The stomach rests in a hoop on a hardwood base, and its overall dimensions are 5 x 5 x 11 inches (13 x 13 x 28 cm). 17 features, hand numbered on the model, are identified in the accompanying key.

Age Range: High School – College

LIVER AND GALLBLADDER

A51
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $266.00

The ventral surface of this larger than life replica of the liver and gallbladder is dissected to expose major blood vessels and bile ducts in deep relief. Understanding of the network of vessels and ducts is facilitated by the large size of the model.

Color-coding is employed to clarify the complex vascular network. The portal vein and its branches are colored lavender, the gallbladder and bile ducts are green, the hepatic artery and its branches vermillion, and the hepatic veins blue.

The model measures 13 x 11 x 6 inches (33 x 28 x 15 cm), and twenty-eight hand-numbered structures are identified in the accompanying key.

Age Range: High School – College

PASSAGE OF FOOD THROUGH THE DIGESTIVE TRACT

C9622-VHS
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Video 5 min
Price: $26.20

This video uses X-Ray images augmented with a "working" model of the human digestive system to show how food passes through each stage of digestion.

Age Range: Grades 7 – 12

HEART AND CIRCULATION

BACHIN/BECK ANATOMICAL CHARTS–VASCULAR SYSTEM

S24303
Fisher-EMD
Tel: (800) 955-1177/(312) 378-7770
Fax: (312) 378-7174

Chart
Available as Set
Available Individually
Price: $12.50/$29.00/$69.00

This chart, depicting the human skeletal system, is printed on kimdura, a special high gloss tear-resistant paper designed to last a lifetime. The Desk Size and Poster Size have a rigid vinyl lamination and metal eyelets in each top corner for convenient wall hanging. The Giant Size is mounted on sturdy wood rods at top and bottom.

To order, attach suffix to item number to indicate size desired:
DL — Desk Size, 11 x 14 inches — $12.50 each
PL — Poster Size, 20 x 26 inches — $29.00 each
GW — Giant Size, 42 x 62 inches — $69.00 each

Age Range: High School – College

BLOOD

A1VH 9467
Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

Video w/Teacher's Guide 33 min.
Price: $120.00

An up-to-date video that looks at the cellular functions of blood, this program examines platelets, blood products, substitutes, and storage as well as the different types of blood. Students will also gain insight into such related topics as active and passive immunity, AIDS, and the role of the Red Cross.

Age Range: Grades 7 – 12

BLOOD: THE INSIDE STORY

A69530-C
Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

4 Filmstrips w/Teacher's Guide 12 min. avg.
Available as Set
Price: $120.00

Make a difficult and complex topic — the composition of blood — understandable and interesting. This series analyzes the make-up of blood in a thorough and student-involving manner. Real-life photographs add to the presentation's success.

- Blood: An Invisible World
- Blood Wars: Antigens, Antibodies
- Finding the Right Mix: Type
- Negative or Positive: The Rh factor

Age Range: Grades 4 – 9

CARDIOCOMP 1

Intelitool
Tel: (800) 227-3805/(708) 406-1041
Fax: (708) 406-1318

Computer Program
Call for current price

Cardiocomp is a reliable cardiac chart recorder replacement. It combines specifically designed cardiac data acquisition hardware with powerful, but easy to use software.

HEART AND CIRCULATION

Cardiocomp is for both the novice and the advanced user.

Physiological Concepts Taught:
- Cardiac Electro-Physiology
- ECG Features & Intervals
- Function of Cardiac Conduction System
- Projection nature of leads
- Lead Interpretation
- Sweeping nature of Cardiac Signal Propagation
- Meaning of the R Wave Axis
- T & P Wave Axis
- Movement of electrical axis by moving Anatomical axis
- Electrical nature of all muscles
- Changes in muscle activity with load changes
- Principles of antagonistic muscle systems

Includes software, 1-lead data acquisition board, electrode cable harness, four flat plate snap electrodes, four electrode straps, electrode gel, manuals, and demonstration video tape.

Apple Systems require an Apple II, II+, IIe or IIgs with a minimum of 64K and one disk drive. The Cardiocomp system will not work with the Apple IIc. Hard copy output requires a printer with graphics capability such as the Apple Imagewriter or Apple Scribe. Printers other than these require a Grappler parallel interface card or an interface card that uses the Grappler command set.

MS-DOS Systems require an IBM PC or PC-compatible with 256K or RAM and CGA or Hercules graphics capability. Cardiocomp requires an available expansion slot. Cardiocomp will operate with a PS/2 Model 25, 30, or 30/286. Cardiocomp is not available for models 50 through 80. The Epson and IBM dot matrix printers are supported.

Age Range: High School – College

CARDIOCOMP 7

Intelitool
Tel: (800) 227-3805/(708) 406-1041
Fax: (708) 406-1318

Computer Program
Call for current price

Cardiocomp is a reliable cardiac chart recorder replacement. It combines specifically designed cardiac data acquisition hardware with powerful, but easy to use software. Cardiocomp is for both the novice and the advanced user.

Physiological Concepts Taught:
- Cardiac Electro-Physiology
- ECG Features & Intervals
- Function of Cardiac Conduction System
- Projection nature of leads
- Lead Interpretation
- Sweeping nature of Cardiac Signal Propagation
- Meaning of the R Wave Axis
- T & P Wave Axis
- Movement of electrical axis by moving Anatomical axis
- Electrical nature of all muscles
- Changes in muscle activity with load changes
- Principles of antagonistic muscle systems

Other applications for cardiocomp:
- EMG, Biofeedback, Other bio-potential labs.

Includes software, 7-lead data acquisition board, 5 electrode cables, 4 flat plate snap-on appendicular electrodes, 4 electrode straps, 1 snap-on well chest electrode, electrode cable junction box, electrode gel, electrode washers, manuals, and demonstration video tape.

Apple Systems require an Apple II, II+, IIe or IIgs with a minimum of 64K and one disk drive. The Cardiocomp system will not work with the Apple IIc. Hard copy output requires a printer with graphics capability such as the Apple Imagewriter or Apple Scribe. Printers other than these require a Grappler parallel interface card or an interface card that uses the Grappler command set.

MS-DOS Systems require an IBM PC or PC-compatible with 256K or RAM and CGA or Hercules graphics capability. Cardiocomp requires an available expansion slot. Cardiocomp will operate with a PS/2 Model 25, 30, or 30/286. Cardiocomp is not available for models 50 through 80. The Epson and IBM dot matrix printers are supported.

Age Range: High School – College

CARDIOCOMP 12

Intelitool
Tel: (800) 227-3805/(708) 406-1041
Fax: (708) 406-1318

Computer Program
Call for current price

Cardiocomp is a reliable cardiac chart recorder replacement. It combines specifically designed cardiac data acquisition hardware with powerful, but easy to use software. Cardiocomp is for both the novice and the advanced user.

Physiological Concepts Taught:
- Cardiac Electro-Physiology
- ECG Features & Intervals
- Function of Cardiac Conduction System
- Projection nature of leads
- Lead Interpretation
- Sweeping nature of Cardiac Signal Propagation
- Meaning of the R Wave Axis
- T & P Wave Axis
- Movement of electrical axis by moving Anatomical axis
- Electrical nature of all muscles
- Changes in muscle activity with load changes
- Principles of antagonistic muscle systems

Includes software, 12-lead data acquisition board, 10 electrode cables, 4 snap appendicular electrodes, 4 electrode straps, 6 snap-on well chest electrodes, electrode cable junction box, electrode gel, electrode washers, manuals, and demonstration video tape.

Apple Systems require an Apple II, II+, IIe or IIgs with a minimum of 64K and one disk drive. The Cardiocomp system will not work with the Apple IIc. Hard copy output requires a printer with graphics capability such as the Apple Imagewriter or Apple Scribe. Printers other than these require a Grappler parallel interface card or an interface card that uses the Grappler command set.

MS-DOS Systems require an IBM PC or PC-compatible with 256K or RAM and CGA or Hercules graphics capability. Cardiocomp requires an available expansion slot. Cardiocomp will operate with a PS/2 Model 25, 30, or 30/286. Cardiocomp is not available for models 50 through 80. The Epson and IBM dot matrix printers are supported.

Age Range: High School – College

HEART AND CIRCULATION

CARDIOVASCULAR SIMULATION PROGRAM: COMPUTER RABBIT

4FCH-623-A
Intellimation
Tel: (800) 346-8355/(805) 968-2291
Fax: (805) 968-8899

Computer Program
Price: $35.00

A simulation in cardiovascular regulations.
G. Hellekant, A. Tsang, University of Wisconsin

Now students can conduct the same cardiovascular experiments done on live animals on-screen with this highly accurate and accessible simulation program. By creating a real-time recording of the arterial blood pressure, barorecepter nerve impulses, and the parameters which influence them, students can observe the effects of physiological and pharmacological stimulation on arterial blood pressure.

Computer Requirements:
Mac: 1MB RAM or higher
System 6.0.5 or higher
System 7 compatible

Single copy: 4FCH-623-A $35.00
Site license: 4FCH-623-C $129.00

Age Range: College

CIRCULATORY SYSTEM MODEL ACTIVITY SET

C2671
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Model, Guide, Color Transparency
Available as Set
Available Individually
Price: $89.25

Add a tactile dimension to anatomical studies with this three-dimensional model of the circulatory system. A cutaway view of the interior structure of the heart can be felt and studied without the complications of dissection. This process is reinforced with an excellent three-overlay transparency of the heart. Trace the vessel system throughout the body while viewing an enlarged cutaway section of a vein and artery.

Activity set includes an 18" H x 24" W model and a customized guide.

Age Range: Grade 7 – 12

COMPARATIVE VERTEBRATE HEARTS

C13022
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Model
Available as Set
Available Individually
Available for Loan
Price: $15.75

These comparative models emphasize the dramatic changes that have occurred in the development of the hearts of fish through mammals. Each organ model, printed on durable vinyl, provides a detailed 3-D view of the heart as it evolved. This set includes five models and a plastic stand to display the set.

Age Range: Grade 7 – College

DEATH OF AN ARTERY

D079149
Health Edco
Tel: (800) 299-3366, x295
Fax: (817) 751-0221

Model
Price: $82.50

Use this 9" x 12" model to demonstrate the way arteries can be clogged by deposits of fat. With five hand-painted, fixed cross-sections of arteries, you can show students the various stages of arteriosclerosis. As they see the interior size of the vessel diminishing, you can easily explain the disease process of one of the most insidious and potent killers in the Western world.

Age Range: Grades 7 – 12

DISSECTION & ANATOMY OF THE HEART

S17618M
Fisher-EMD
Tel: (800) 955-1177/(312) 378-7770
Fax: (312) 378-7174

Video
Available as Set
Available Individually
Price: $155.00

You will have a powerful tool at your fingertips when you bring this educational videotape of an actual heart dissection into your classroom. This video is a versatile teaching aid and can be used as an alternative to an actual dissection.

The video presents students with a close-up view of the special procedures used for dissecting the heart. Proper dissection techniques are followed by a comprehensive review of the internal anatomy and physiology. A series of specific review questions is included.

Each video comes with a protective storage case.

Age Range: High School – College

DISSECTION AND ANATOMY OF THE HEART

4090
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Video 14:20 min
Price: $135.00

Presented by Dr. Tom Quinn, Professor of Anatomy, Creighton University School of Medicine.

Employing the heart of a pig because of its similarity to that of a human, Dr. Quinn performs a detailed dissection while simultaneously narrating.

Dr. Quinn pays special attention to valve function and translating latinized terms to make them meaningful, then reinforces the dissection using the Denoyer-Geppert Heart of America™ model for an on-screen review

HEART AND CIRCULATION

FROG ANATOMY SERIES – HEART

4FCH-132-A
Intellimation
Tel: (800) 346-8355/(805) 968-2291
Fax: (805) 968-8899

Computer Program
Available as Set
Available Individually
Price: $29.00 (see below)

Philip Stephens, Villanova University

A HyperCard series focusing on lab preparation for a specific frog anatomical structures. To be used for independent study. This program contains a lab exercise that is divided into six sections: background, equipment, methods, data analysis, questions, and references.

of the directional passage of blood through the heart. A set of review questions and list of terms accompanies the program.

This video is capable of replacing student dissection of the pig heart or cow heart in the laboratory.

Age Range: High School – College

DISSECTION VIDEO SERIES II – PIG HEART

L5VH-1223
Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

Video w/Teacher's Guide 15 min
Available as Set
Available Individually
Price: $150.00

Capable of replacing dissection labs, this program provides a clear and detailed presentation of the external anatomy of the specimen, the correct procedures used for dissection, and a review of the internal anatomy and physiological systems. The video is accompanied by a dissection manual and a written examination.

Age Range: Grades 7 – 12

Frog Heart
Info
DATA ANALYSIS
Section
1. The heart rate
Quit
Direction

Computer Requirements:
Mac: 1MB RAM or higher
System 6.0.5 or higher
HyperCard 2.0 or higher
System 7 compatible

Single copy: 4FCH-132-A $29.00
Site license: 4FCH-132-C $99.00

Age Range: College

DRUGS AND HEARTBEAT

CR-016
Cross Educational Software
Tel: (800) 768-1969/(318) 255-8921

Computer Program
Price: $29.95

Through the use of computer technology, students are able to count and chart a daphnia's heartbeat for one minute as alcohol, caffeine, nicotine, valium, codeine and cocaine are washed over it.

This program is a data-taking activity with a deeper message. Students see for themselves that drugs can have dangerous effects on the heart. Students also learn the more subtle message that cardiac physiology can be explored without the use of vivisection.

Computer Requirements:
Apple: Min. Req. 48K

Age Range: High School

BEST COPY AVAILABLE

FUNCTIONING PUMPING HEART AND CIRCULATORY SCHEMATIC

AP44
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $554.00

Ingeniously engineered, this fully-functional schematic replica portrays a sagittally-sectioned human heart showing all four chambers, valves, and major vessels of the cardiovascular system. More convincing than a computer simulation, the liquid-filled working model provides positive visual evidence of the double-pump nature of the heart and isolation of the pulmonary and systemic circulatory systems, and the directional flow of the bloodstream.

Transparent plastic tubing comprising the pulmonary arteries and veins connects the heart to the right and left lungs, completing the pulmonary circuit. Additional tubing representing the aorta and vena cava connects the heart to a schematic capillary bed, illustrating the systemic circuit. Vessels which transport "deoxygenated blood" are tinted bluish, lending a darker hue to "blood" blowing through them than the brilliant red of the "oxygenated blood" which circulates through untinted vessels.

Inflatable silicone diaphragms mounted beneath the plexiglass heart are connected to two air-filled rubber balls — one for the artria — and one for the ventricles. Grasping a bulb in each hand and alternately squeezing them will first compress the walls of the artria, then those of the ventricles, emptying the upper and lower chambers in turn. This authentic pumping action results in the rhythmic, pulsing circulation of the "blood" (colored water).

The model is supplied with powdered food dye and a plastic syringe for filling the system. Intentionally allowing some air bubbles to remain in the vessels greatly aids the observation of the flow of blood as it circulates.

HEART AND CIRCULATION

The model is mounted on a 14 x 15 inch (35 x 37 cm) formica-laminated board with support legs.

Age Range: Grade 7 – College

GIANT HEART WITH PERICARDIUM ON DIAPHRAGM

A41
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $278.00

Perfect for group presentations because of its prominent size and visibility, this detailed vinyl plastic replica depicts the human heart complete with major vessels and portion of the pericardium resting in its natural position on the diaphragm.

A giant in instructional value too, visible external features include: the right and left atria with their auricles; coronary sulcus; coronary arteries; anterior interventricular sulcus; circumflex artery; coronary veins and coronary sinus; ascending aorta; aortic arch with major tributaries, the left subclavian artery, left common carotid artery and brachiocephalic trunk; inferior and superior venae cavae with left and right brachiocephalic veins; the pulmonary trunk with its sinus, and left and right pulmonary arteries; the four pulmonary veins; segments of esophagus and trachea; lower portion of the pericardium; diaphragm section with centrum tendineum and hiatuses of the descending aorta, esophagus and inferior vena cava; apex of the heart; and descending aorta.

Removing the anterior wall of the heart will reveal the interior of the right atrium and right auricle; the entrances of the superior and inferior venae cavae; flexible tricuspid valve with its chordae tendineae and papillary muscles; the interior of the right ventricle with trabeculae carneae, pulmonary valve exiting the right ventricle; interventricular septum, the interior of the left atrium and left auricle; the entrances of the four pulmonary veins; life-like mitral (bicuspid) valve; interior of left ventricle; and the aortic valve exiting the left ventricle.

In all, 59 features identified in the accompanying key are number coded on the model.

Age Range: Grade 7 – College

GIANT HUMAN ANATOMY CHARTS – CIRCULATORY SYSTEM

1583
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Chart
Available as Set
Available Individually
Price: $49.00/$64.00

This giant-scale chart is an anatomical masterpiece, lithographed in brilliant colors to maximize understanding of the circulatory system. Its lifesize three-dimensional views and "transparent" portrayals afford excellent classroom visibility, and make it easier to visualize structural relationships and anatomical complexities. Mirror views trace blood vessels to body regions normally hidden from view. A detailed identification key is printed beside each illustration.

This chart measures 44 x 72 inches (112 x 183 cm) and is available individually or as part of a complete set.

To Order Single Charts:
Specify catalog number shown plus appropriate suffix to indicate your choice of mounting option.

For Single Charts with Hang-up Mount:
Add suffix (-10) to catalog number. Chart is mounted with rods top and bottom with loops for hanging. $49.00 each.

For Single Charts with Spring Roller Mount:
Add suffix (-14) to catalog number. Chart is mounted with individual spring roller attached to steel backboard. $64.00 each.

Age Range: High School – College

GIANT HUMAN ANATOMY CHARTS – SCHEMES OF CIRCULATION

1584
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Chart
Available as Set
Available Individually
Price: $49.00/$64.00

This giant-scale chart is an anatomical masterpiece, lithographed in brilliant colors to maximize understanding of the Schemes of Circulation: Systemic, Pulmonary, Portal and Capillary. Its lifesize three-dimensional views and "transparent" portrayals afford excellent classroom visibility, and make it easier to visualize structural relationships and anatomical complexities. Color-coding and stylized three-dimensional illustrations fully represent the mechanisms of circulation. A detailed identification key is printed beside each illustration.

This chart measures 44 x 72 inches (112 x 183 cm) and is available individually or as part of a complete set.

To Order Single Charts:
Specify catalog number shown plus appropriate suffix to indicate your choice of mounting option.

For Single Charts with Hang-up Mount:
Add suffix (-10) to catalog number. Chart is mounted with rods top and bottom with loops for hanging. $49.00 each.

For Single Charts with Spring Roller Mount:
Add suffix (-14) to catalog number. Chart is mounted with individual spring roller attached to steel backboard. $64.00 each.

Age Range: High School – College

GIANT HUMAN ANATOMY CHARTS – THE HEART

1585
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

HEART AND CIRCULATION

Chart
Available as Set
Available Individually
Price: $49.00/$64.00

This giant-scale chart is an anatomical masterpiece, lithographed in brilliant colors to maximize understanding of the heart. Its lifesize three-dimensional views and "transparent" portrayals afford excellent classroom visibility, and make it easier to visualize structural relationships and anatomical complexities. Five greatly enlarged figures of the heart are depicted, each from a different perspective. A detailed identification key is printed beside each illustration.

This chart measures 44 x 72 inches (112 x 183 cm) and is available individually or as part of a complete set.

To Order Single Charts:
Specify catalog number shown plus appropriate suffix to indicate your choice of mounting option.

For Single Charts with Hang-up Mount:
Add suffix (-10) to catalog number. Chart is mounted with rods top and bottom with loops for hanging. $49.00 each.

For Single Charts with Spring Roller Mount:
Add suffix (-14) to catalog number. Chart is mounted with individual spring roller attached to steel backboard. $64.00 each.

Age Range: High School – College

GIANT HUMAN ANATOMY CHARTS – THE LYMPHATIC SYSTEM

1587
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Chart
Available as Set
Available Individually
Price: $49.00/$64.00

This giant-scale chart is an anatomical masterpiece, lithographed in brilliant colors to maximize understanding of the lymphatic system. Its lifesize three-dimensional views and "transparent" portrayals afford excellent classroom visibility, and make it easier to visualize structural relationships and anatomical complexities. Unique three-dimensional illustrations vividly portray the lymphatic system and its relationship to the circulatory system. Split images compare and contrast lymphatic drainage of the male and female pelvic regions. A detailed identification key is printed beside each illustration.

This chart measures 44 x 72 inches (112 x 183 cm) and is available individually or as part of a complete set.

To Order Single Charts:
Specify catalog number shown plus appropriate suffix to indicate your choice of mounting option.

For Single Charts with Hang-up Mount:
Add suffix (-10) to catalog number. Chart is mounted with rods top and bottom with loops for hanging. $49.00 each.

For Single Charts with Spring Roller Mount:
Add suffix (-14) to catalog number. Chart is mounted with individual spring roller attached to steel backboard. $64.00 each.

Age Range: High School – College

GOOD ARTERY/BAD ARTERY

D079233
Health Edco
Tel: (800) 299-3366, x295
Fax: (817) 751-0221

Chart
Price: $49.95

This chart graphically depicts the difference between healthy arteries and those clogged with fat. One look at this display and you'll have a clear idea of what a high-fat diet can do to your arteries and to your heart. Chart comes complete with frame.

Age Range: Grades 7 – 12

HEART ANAMOD

C13001
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Model
Available as Set
Available Individually
Available for Loan
Price: $10.95

Anamods are anatomical models printed in full color on durable vinyl. Each organ model is made up of die-cut pieces that easily fit together to create a detailed 3-D model. Anamods are number-coded and keyed to a comprehensive Teacher's Guide, included with each model. An attractive plastic stand is also included with each Anamod.

Age Range: Grade 7 – College

HEART FITNESS LAB - C6214

Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Lab Kit
Price: $68.25

Involve the entire class in a variety of activities as they learn about the function of the heart and importance of physical fitness with this informative lab. By monitoring heart rates and recovery times and collecting data, students measure the effects of exercise and the impact of added weight on heart rate.

Kit contains: stethoscope, extra weight backpack, and Teacher's Packet with several activity plans.

Age Range: High School

HUMAN ELECTROCARDIOGRAM

4FCH-142-A
Intellimation
Tel: (800) 346-8355/(805) 968-2291
Fax: (805) 968-8899

Computer Program
Available as Set
Available Individually
Price: $29.00 (see below)

A HyperCard study of the Human ECG.
Philip Stephens, Villanova University

Through this two-part lab tutorial, students receive an extensive description of the classic Human ECG (response, artifacts, heart sounds, exercise effects) and finger pulse (dicchrotic notch, exercise effects, tempera-

HEART AND CIRCULATION

ture effects). The program then correlates the ECG and finger pulse.

Computer Requirements:
Mac: 1MB RAM or higher
System 6.0.5 or higher
HyperCard 2.0 or higher
System 7 compatible

Single copy: 4FCH-142-A $29.00
Site license: 4FCH-142-C $99.00

Age Range: College

INTELIPULSE

Intelitool
Tel: (800) 227-3805 (708) 406-1041
Fax: (708) 406-1318

Computer program
Call for current price

InteliPulse is a useful tool for teaching basic exercise-related physiology principles, for research, or for monitoring and tracking of sport and exercise participants.

InteliPulse allows you to:

- Observe how heart rate responds during warm-up, exercise and recovery
- Understand the basis for predicting maximal oxygen uptake based upon the heart rate response to submaximal work loads
- See the relationship between oxygen consumption and variables such as weight, age, conditioning level and more
- Depict the changes in systolic and diastolic blood pressure with various exercise intensities
- Motivate members of a wellness, fitness or sports program with ongoing fitness testing
- Quantify pre- and post-training aerobic conditioning levels
- Demonstrate the linear relationship between heart rate, work rate and oxygen consumption

Data Acquisition:

- Heart Rate is continuously monitored and plotted throughout the test
- Minute by minute display of test progress
- Continuous ECG display provides a rhythm trace for reliable heart rate signal
- Audiovisual metronome, helping the subject maintain proper cadence while cycling or stepping

InteliPulse now directly controls Trackmaster and Woodway Treadmills and Tectrix Stairclimbers.

Age Range: High School – College

LIFE-SIZE HEART WITH CORONARY BYPASSES

A48
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $176.00

This nonbreakable vinyl replica has been fitted with flexible tubing, representing segments of the saphenous vein of the leg, surgically anastomosed to the ascending aorta and the right coronary artery, the left anterior descending coronary artery and the circumflex artery.

Attachable/detachable bypass vessels allow the model to be used as a normal heart without bypasses, or to demonstrate single, double and triple coronary bypasses.

Dividing the heart into halves exposes its chambers and its flexible tricuspid and bicuspid valves.

Nested on a hardwood display base, the heart lifts off for hands-on demonstrations. Its overall dimensions are 5 x 5 x 10 inches (13 x 13 x 25 cm).

Age Range: Grade 7 – College

PUMPING HEART MODEL

52-130-3312
Delta Education, Inc.
Tel: (800) 442-5444
Fax: (800) 282-9560

Model
Price: $26.00

When students squeeze the bulb of this model, they will see "blood" flowing through valves, arteries, veins and heart cavities. The heart comes fully assembled — just add liquid.

Age Range: Elementary

PUMPING LIFE: THE HEART AND CIRCULATORY SYSTEM

L5VH 1074
Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

Video w/Teacher's Guide 22 min.
Price: $90.00

Journey through the four chambers of the heart and show how this amazing organ pumps blood through the entire body. Your students will learn the functions of the circulatory system, the importance of blood, and the roles of the red and white blood cells as they view this award-winning video. They will also see the circulatory system at work as photomicrographs capture blood coursing through arteries and white blood cells battling bacteria. The program also covers health issues related to the heart and circulation. The teacher's guide includes review questions, a reproducible worksheet, and suggestions for activities.

"This video is an excellent teacher tool..."
Best of the Year, Science Books & Films

"...an informative classroom presentation."
Booklist

"Schools needing a fresh approach to this basic subject will be pleased to find this reasonably priced video."
Video Rating Guide for Libraries

Age Range: Grades 5 – 9

THE BIO-MONITOR

7092-910
Phipps & Bird
Tel: (800) 955-7621

Lab Kit
Available for Loan
Price: $200.00

The Bio-Monitor is essentially a simplified ECG that operates on transistor radio batteries. It provides the user with both an audible and visual response (beeping sound and flashing light). Experiments in the teaching manual include how to determine mean heartbeat, the effects of exercise, and

HEART AND CIRCULATION

how body weight and height pertain to heart rate differences.

Age Range: High School – College

THE HEART AND CIRCULATION

C9623 - VHS
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Video 5 min.
Available as Set
Available Individually
Price: $26.20

This video illustrates the relationship between pulse, flow of blood, and the heart. It includes dramatic footage of open heart surgery.

Age Range: Grade 7 – 12

THE NEW HEART OF AMERICA™

A40
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $333.00

Expanding its role as the most universally-accepted, most widely-used heart model in the world, the NEW Heart of America™ has been totally resculpted to incorporate even more anatomical detail than its predecessor. Additional new detailing includes the fossa ovalis, opening and valve of the coronary sinus, more clearly delineated coronary arteries and branches, and improved mitral and tricuspid valves, which extend the teaching value of the model.

No less than 63 cardiac structures, permanently number-coded by hand are identified in the all-new key. (Our previous model identified only 45). Three hinged access portals swing open with the flip of your finger to reveal the faithful detailing of the interior of the heart chambers. Even more life-like tricuspid and mitral valves with flexible chordae tendineae enhance understanding of valve action in controlling the directional flow of blood. Portions of the trachea and esophagus are included to demonstrate their relationship to major vessels.

Each NEW Heart of America™ is 100% handcrafted in the United States from a custom-formulated vinyl plastic compound which is virtually unbreakable. Metal hinges for the access portals are bonded into the model. No screws to become stripped or work loose with usage!

The model is meticulously hand-painted in ten vibrant colors guaranteed to retain their brilliance, integrity and life-like appearance. Because of its reputation for authentic detail, as well as durability, each model is proudly autographed and dated by the artisan who crafted it.

Mounted on a genuine hardwood pedestal which permits full rotation or quick removal for pass around, the New Heart of America™ measures 7 x 7 x 15 inches (18 x 18 x 38 cm) overall.

Age Range: High School – College

THE NEW HEART OF AMERICA™ PLUS W/CORONARY BYPASS VESSELS

A49
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Available for Loan
Price: $388.00

Truly the all-in-one heart model, the NEW Heart of America Plus encompasses all the exclusive features of the world-renowned Heart of America™ ...plus an accurately-scaled brachiocephalic trunk, left common carotid and left subclavian artery, complete with right and left internal thoracic (internal mammary) arteries, plus attachable/detachable bypass vessels of flexible tubing in a variety of lengths.

Use the bypass tubing, complete with built-in quick-connects, to instantly install single, double, or triple bypasses, representing grafts of the saphenous vein of the lower leg, to connect the ascending aorta to the coronary arteries.

Or, in place of one of the vein grafts, connect the left internal mammary artery to the

THE HEART TEACHING PROGRAM W/HEART OF AMERICA™ MODEL

741
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model w/Teaching Components
Price: $403.00

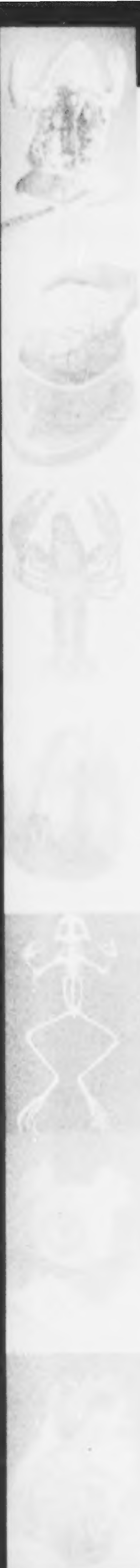
This teaching program was designed to augment studies with the Denoyer-Geppert Heart of America model 140.

Four teaching components are included:

1. Audio cassette
2. Captioned filmstrip
3. Illustrated manual
4. Set of 11 Black Line Master Test Sheets

The program components are assembled in a jumbo ring binder.

Age Range: High School – College



HEART AND CIRCULATION

left anterior descending coronary artery (LIMA bypass). You can even demonstrate bilateral IMA bypasses employing both right and left internal mammary arteries.

You can demonstrate the anatomy of the normal healthy heart by simply detaching all bypass vessels. Even when bypass vessels are installed, you still have full internal access to all four heart chambers and to the life-like resilient mitral and tricuspid valves, by means of exclusive flip-open hinged access portals.

The overall dimensions of this model are 7 x 7 x 17 inches (18 x 18 x 43 cm).

Age Range: Grade 7 – College

SHEEP HEART

Ward's Biology
Tel: (800) 962-2660
Fax: (800) 635-8439

Video
Price: $129.95

Enhance student learning with a video that is so complete that it comes with a written examination and dissection manual. The precise commentary and step-by-step footage highlights major systems and provides clear, detailed views of all important steps guiding students through the critical procedures. Video is live action.

Age Range: High School – College

ANAMOD - KIDNEY

C13003
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Model
Available as Set
Available Individually
Available for Loan
Price: $10.95

Anamods are anatomical models printed in full color on durable vinyl. Each organ model is made up of die-cut pieces that easily fit together to create a detailed 3-D model. Anamods are number-coded and keyed to a comprehensive Teacher's Guide, included with each model. An attractive plastic stand is also included with each Anamod.

Age Range: Grade 7 – College

KIDNEY

FREE-STANDING URINARY SYSTEM

A55
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $353.00

Unlike ordinary urinary system models, which are two dimensional plaques presenting only half the picture, this fully three-dimensional replica of the male urinary apparatus and its blood supply is free-standing, permitting study from all aspects.

Molded entirely of non-breakable vinyl polymer, the larger-than-life model consists of three parts: 1) the kidneys, adrenals and blood vessels, 2) a section of the pelvic bones with pubic symphysis, lower portion of the bladder and prostate, and 3) the upper portion of the bladder and prostate. Flexible plastic tubing is utilized for the ureters.

The right kidney is sagittally sectioned revealing its cortex, medulla, pyramids, calyces, pelvis and the ramifications of the renal artery and vein. Other blood vessels included are the large abdominal aorta and inferior vena cava and their bifurcations, the common iliac and ultimately the femoral arteries and veins.

Opening the bladder exposes the folded mucosa of its interior, the orifices of the ureters, the trigone, prostatic portion of the urethra, seminal vesicles, ejaculatory ducts and vas deferens.

The overall dimensions of this model are 12 x 19 x 8 inches (30 x 48 x 20 cm). 50 hand-numbered features are identified in the accompanying key.

Age Range: High School – College

STUDENT STUDY SHEETS CORRELATED WITH URINARY SYSTEM MODEL

145-8589
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Study Sheets
Price: $8.50 each

Black Line copy master for reproducing notebook-size illustrated study sheets of the urinary apparatus with parts numbered to correspond with those on Denoyer-Geppert Free-Standing Urinary System Model, #145. Answer Key is printed on the reverse.

Age Range: High School - College

DELUXE KIDNEY

A57
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $260.00

The left kidney scaled to three times life-size and parasagittally sectioned over three-fourths of its length is portrayed by this Denoyer-Geppert vinyl plastic replica.

Shown in deep relief are the renal artery and vein, a portion of the ureter, cortex, medulla, pyramids, pelvis, major and minor calyces, internal blood supply and drainage.

Nephrons are detailed in contrasting colors with the distal and proximal convoluted tubules somewhat simplified for clarity. Several loops of Henle with numerous

KIDNEY

glomeruli are schematically detailed in relief.

Thirty-four structures, identified in the accompanying key, are hand-numbered on the kidney. Standing on an integrally molded base, the model measures 14 x 8 x 5 inches (36 x 20 x 13 cm).

Age Range: High School – College

KIDNEY DIALYSIS SIMULATION

Ward's Biology
Tel: (800) 962-2660
Fax: (800) 635-8439

Lab Experiment
Price: $29.00

A simple yet instructive system imitates the kidney's process of filtering blood to excrete waste while conserving water. Run WARD'S Simulated Blood through the "kidney", a semi-permeable membrane, the "blood" remains and the "urine" is excreted.

In addition, students make microscope slide smears to observe that the red blood cells of the simulated blood are not present in the urine. They can also test the salt content before, during, and after filtering. This easy procedure can be completed in one lab period, with results in 10 minutes. Includes all supplies, teacher's manual, student guides, and materials for up to 15 lab groups.

Age Range: High School

GIANT HUMAN ANATOMY CHARTS – UROGENITAL SYSTEM

1590
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Chart
Available as Set
Available Individually
Price: $49.00/$64.00

This giant-scale chart is an anatomical masterpiece, lithographed in brilliant colors to maximize understanding of the human urinary and genital systems. Its lifesize three-dimensional views and "transparent" portrayals afford excellent classroom visibility, and make it easier to visualize structural relationships and anatomical complexities. Multiple views and contrasting colors enhance comprehension. Cellular stages of spermiogenesis and highly magnified details of the nephron network of the kidney supplement this total system overview. A detailed identification key is printed beside each illustration.

This chart measures 44 x 72 inches (112 x 183 cm) and is available individually or as part of a complete set.

To Order Single Charts:
Specify catalog number shown plus appropriate suffix to indicate your choice of mounting option.

For Single Charts with Hang-up Mount:
Add suffix (-10) to catalog number. Chart is mounted with rods top and bottom with loops for hanging. $49.00 each.

For Single Charts with Spring Roller Mount:
Add suffix (-14) to catalog number. Chart is mounted with individual spring roller attached to steel backboard. $64.00 each.

Age Range: High School – College

LIQUID WASTE AND THE KIDNEY

C9625-VHS
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Video 5 min.
Available as Set
Available Individually
Price: $26.20

This single-concept video is fully color-enhanced and presents basic anatomical information using animation.

Age Range: Grades 7 – 12

RIGHT KIDNEY AND ADRENAL GLAND

A58
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $129.00

Featuring an exclusive bonded-in metal hinge, this all-new vinyl plastic replica of the human right kidney, complete with adrenal gland and proximal portion of the ureter, swings open to expose its internal anatomy.

Opening like a locket, the interior features — including the cortex, medulla, major and minor calyces, renal columns, pelvis and the ramifications of the renal artery and vein — are exposed for study. All features are hand-numbered for identification in the accompanying key, and are accented through the use of Denoyer-Geppert custom colors.

Resting upright on a finished hardwood pedestal, the kidney can be rotated 360 degrees or lifted off for hands-on scrutiny. Its overall dimensions are 5 x 5 x 11 inches (13 x 13 x 28 cm).

Age Range: High School – College

THE KIDNEY AND HOMEOSTASIS

A5VH 1077
Cleavue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

Video w/Teacher's Guide 12 min.
Price: $70.00

This video will help your students play an active role in learning about the relationship of the structure and function of the kidney. The BSCS Classic Inquiry program allows them the opportunity to be participants by answering questions, and interpreting and explaining data.

Age Range: Grades 7 – 12

KIDNEY

LUNGS

URINARY SYSTEM MODEL ACTIVITY SET

C2675
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Model, Guide, Color Transparency
Available as Set
Available Individually
Price: $81.50

Introduce your students to anatomy with this model shown in raised relief. Colorful three-dimensional views of the kidneys are shown in detail, illustrating a magnified nephron. The dissected kidney is enlarged to illustrate the cortex, pyramid, calyx, and papilla.

The 18" H x 24" W model is integrated with a detailed full-color transparency, Black Line master and teacher-developed guide.

Age Range: Grades 7 – 12

ANAMOD – LUNG

C13006
Hubbard Scientific
Tel: (715) 723-4427/(800)289-9299

Model
Available as Set
Available Individually
Available for Loan
Price: $10.95

Anamods are anatomical models printed in full color on durable vinyl. Each organ model is made up of die-cut pieces that easily fit together to create a detailed 3-D model. Anamods are number-coded and keyed to a comprehensive Teacher's Guide, included with each model. An attractive plastic stand is also included with each Anamod.

Age Range: Grade 7 – College

BACHIN/BECK ANATOMICAL CHARTS–RESPIRATORY SYSTEM

S24305
Fisher-EMD
Tel: (800) 955-1177/(312) 378-7770
Fax: (312) 378-7174

Charts
Available as Set
Available Individually
Price: $12.50/$29.00/$69.00

This chart, depicting the human respiratory system, is printed on kimdura, a special high gloss tear-resistant paper designed to last a lifetime. The Desk Size and Poster Size have a rigid vinyl lamination and metal eyelets in each top corner for convenient wall hanging. The Giant Size is mounted on sturdy wood rods at top and bottom.

To order, attach suffix to item number to indicate size desired:
DL — Desk Size, 11 x 14 inches — $12.50 each
PL — Poster Size, 20 x 26 inches — $29.00 each
GW — Giant Size, 42 x 62 inches — $69.00 each

Age Range: High School – College

BREATHING FITNESS LAB

C6212
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Lab Kit
Price: $120.75

The Breathing Fitness Lab is one of a series of labs that were developed by the Lawrence Hall of Science around "real life" areas of interest — for example, breathing, balance, etc. As students follow the activities described in the Teacher's Packet, they learn and apply methods of scientific investigation. In the process, they learn more than scientific principles. These activities incorporate math, social studies, communications and language arts skills that will enrich any curriculum or lesson plan.

In this lab, students investigate the human pulmonary system by measuring breath rate, breath volume, breath recovery, breath control, lung volume, and the amount of CO_2 in exhaled air. Kit includes: breath control meter, lung volume bag, breath volume bag and valve, meter tape, mouth pieces, chemicals, 3 charts, Teacher's Packet with several activity plans. Additional or replacement supplies sold separately.

Age Range: High School

FUNCTIONAL LARYNX

AP48
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $338.00

This is the largest functioning model of the larynx and the ONLY one that is American-made. Scaled to four times life-size for ease of observation, this unbreakable vinyl larynx is complete with hyoid bone and epiglottis. The right side depicts only the cartilaginous structure, while the left side shows the musculature as well.

Pulling on the drawstring will cause the arytenoid cartilages to pivot, which opens the flexible vocal cords. When the drawstring is released, the vocal cords close. A second function permits the epiglottis to close the larynx as in swallowing.

Fifty-six hand-coded features are identified in the accompanying key. The larynx measures 15 x 7 x 5 inches (28 x 18 x 15 cm).

Age Range: High School – College

HUMAN LUNG

4FCH-256-A
Intellimation
Tel: (800) 346-8355/(805) 968-2291
Fax: (805) 968-8899

Computer Program
Price: $29.00

A HyperCard tutorial teaching about the human lung.
Philip Stephens, Villanova University

With this four-part lab exercise, students will learn the anatomy of the respiratory

LUNGS

system and how it works. Students record breathing movements and the corresponding electrocardiogram. Experiments include the effect of gravity on ventilation rate and the effect of rebreathing on breathing.

Computer Requirements:
Mac: 1MB RAM or higher
System 6.0.5 or higher
HyperCard 2.0 or higher
System 7 compatible

Single copy: 4FCH-256-A $29.00
Site license: 4FCH-256-C $99.00

Age Range: College

LUNG ACTION AND FUNCTION

C9624
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Video 5 min.
Available as Set
Available Individually
Price: $26.20

This video explains the functions of the lungs and details the interrelatedness of differing body systems.

Age Range: Grade 7 – College

RESPIRATION AND WASTE

C9626-VHS
Hubbard Scientific
Tel: (715) 723-4427/(800)289-9299

Video 12 min.
Available as Set
Available Individually
Price: $26.20

In this video, both live and animated sequences are used to portray respiration processes.

Age Range: Grade 7 – College

RESPIRATORY ORGANS AND HEART

A42
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $371.00

Fully three-dimensional, this life-size unbreakable plastic replica includes both lungs, trachea, heart, esophagus and complete larynx with vocal cords. All organs are depicted in their natural size and position. This gives an accurate picture of the heart nestled between the lungs, and emphasizes the intimate interconnection of the respiratory and circulatory systems.

The entire larynx is bisected longitudinally. The right half can be detached. Extracting the heart and half of the lung exposes the bifurcation of the trachea and the bronchial tree, as well as the pulmonary arteries and veins.

The heart can be split into halves to show the four chambers. Life-like bicuspid and tricuspid valves add authenticity and reinforce understanding of the directional flow of blood through the heart chambers. Besides tracing the pulmonary circulation, major vessels of the systemic circulation are depicted in their proper orientation. Thus the circulation of blood throughout the body can be demonstrated.

58 numbered structures are identified in the accompanying key. Mounted on a rectangular hardwood base, this model's overall dimensions are 17 x 11 x 6 inches (42 x 28 x 15 cm).

Age Range: High School – College

RESPIRATORY SYSTEM MODEL ACTIVITY SET

C2672
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Model, Guide, Color Transparency
Available as Set
Available Individually
Price: $89.25

Facilitate learning about breathing and the anatomical complexities of the human respiratory system through three detailed model reliefs: the cutaway upper human torso and head, an enlarged image of a bronchial tree, and a greatly magnified alveoli partially sectioned.

The 24" H x 18" W model, activity guide and a three overlay transparency clearly demonstrate the relationships between breathing and adjacent anatomical structures.

Age Range: Grades 7 – 12

SPIROCOMP COMPLETE

Intelitool
Tel: (800) 227-3805/(708) 406-1041
Fax: (708) 406-1318

Computer Program
Call for current price information

Spirocomp is a hardware/software system that combines a computer interfaced spirometer with a powerful software package, to accurately and hygienically measure and graph lung volumes and capacities.

Physiology Concepts Taught with Spirocomp:

- How Expiratory Reserve Volume, Tidal Volume and Inspiratory Reserve Volume add up to the Vital Capacity
- The Principles of Respiratory Physiology
- Differences in Volumes and Capacities Relative to Gender
- Differences between Groups such as Smokers vs. Non-Smokers or Athletes vs. Non-Athletes
- The Erosion of Reserve Volumes as Tidal Volume Increases

Contains a Phipps & Bird wet spirometer, spirometer scale arm transducer, game port cable, one way mouthpiece valve assembly, 4 reusable mouthpieces, software, manuals, and demonstration tape.

All Apple Systems require an Apple II, II+, IIe or IIgs with a minimum of 64K and one disk drive (Apple II and II+ users must also order a game port adapter cable). Hard copy output requires a printer with graphics capability such as the Apple Imagewriter or Apple Scribe. Printers other than these

LUNGS

MULTIPLE ANIMAL ORGANS

require a Grappler parallel interface card or an interface card that uses the Grappler command set.

MS-DOS Systems require an IBM PC or PC-compatible with 256K or RAM and CGA or Hercules graphics capability. Spirocomp is supported on the IBM PS/2 Models 25 through 80 and require a standard IBM game port. Intelitool offers a special game port card which will work on high speed computers. If you have a 286, 386 or 486 computer or a computer which operates at higher than 8 MHz, or both, we highly recommend this card for better results. The Epson and IBM dot matrix printers are supported.

Age Range: High School – College

SPIROCOMP KIT

Intelitool
Tel: (800) 227-3805/(708) 406-1041
Fax: (708) 406-1318

Computer Program
Call for current price information

Spirocomp is a hardware/software system that combines a computer interfaced spirometer with a powerful software package, to accurately and hygienically measure and graph lung volumes and capacities.

Physiology Concepts Taught with Spirocomp:

- How Expiratory Reserve Volume, Tidal Volume and Inspiratory Reserve Volume add up to the Vital Capacity
- The Principles of Respiratory Physiology
- Differences in Volumes and Capacities Relative to Gender
- Differences between Groups such as Smokers vs Non-Smokers or Athletes vs Non-Athletes
- The Erosion of Reserve Volumes as Tidal Volume Increases

Includes spirometer scale arm transducer, game port cable, one way mouthpiece valve assembly, 4 reusable mouthpieces, software, manuals, and demonstration tape.

All Apple Systems require an Apple II, II+, IIe or IIgs with a minimum of 64K and one disk drive (Apple II and II+ users must also order a game port adapter cable). Hard copy output requires a printer with graphics capability such as the Apple Imagewriter or Apple Scribe. Printers other than these require a Grappler parallel interface card or an interface card that uses the Grappler command set.

MS-DOS Systems require an IBM PC or PC-compatible with 256K or RAM and CGA or Hercules graphics capability. Spirocomp is supported on the IBM PS/2 Models 25 through 80 and require a standard IBM game port. Intelitool offers a special game port card which will work on high speed computers. If you have a 286, 386 or 486 computer or a computer which operates at higher than 8 MHz, or both, we highly recommend this card for better results. The Epson and IBM dot matrix printers are supported.

Age Range: High School – College

THE SMOKED LUNG

DO26813
Health Edco
Tel: (800) 299-3366, x295
Fax: (817) 751-0221

Model
Price: $99.00

The Smoked Lung dramatically illustrates what smoking does to the lungs. When the top of this realistic, soft-lung model is opened, a grayish white, fibrous-feeling cancer is revealed. It is ideal for the comparative study of diseased and healthy organs.

Also available are:

1. Real tissue displays that graphically show the deterioration of a smoker's lungs compared to a non-smoker's lungs ($125.00).
2. A comparative real liver display which shows the dramatic impact of alcohol on this vital organ ($150.00).
3. A unique series of 12" x 16" two-sided models which show the internal anatomy of a specific body part on one side and the diseases associated with it on the other. Models include the ear, eye, head, kidney, skin, lung, mouth, pelvis, colon, artery/vein, breast, and many more ($49.00 each/$625.00 set of 15 models).

Age Range: Grade 6 – College

WET SPIROMETER

S17046ND
Fisher-EMD
Tel: (800) 955-1177/(312) 378-7770
Fax: (312) 378-7174

Lab Kit
Price: $329.86

Introduce your students to the basics of respiratory physiology through easily conducted experiments in which they are the subjects. By measuring their own breathing functions, students will quickly become involved in understanding the theoretical aspects of respiration. The spirometer operates on the principle that air exhaled from the lungs will displace water. Air blown through the tube displaces water, which gives the lung capacity reading.

Experiments can be conducted to measure: Tidal Volume (TV), Inspiration Capacity (IC), Inspiration Reserve Volume (IRV), Expiratory Reserve Volume (ERV), Residual Volume (RV), Functional Residual Capacity (FRC), and Vital Capacity (VC). For example, VC is an indicator of how well a person breathes and can be used in determining the presence of diseases such as emphysema, pneumonia, and tuberculosis.

The spirometer comes complete with 100 disposable mouth pieces and instruction manual.

S17046AND — Replacement mouth pieces (pack of 100) — $15.15

Age Range: High School – College

BACHIN/BECK ANATOMICAL CHART–SERIES

Fisher-EMD
Tel: (800) 955-1177/(312) 378-7770
Fax: (312) 378-7174

Charts
Available as Set
Available Individually
Price: $12.95/$29.95/$71.09 each

Each chart in this series is printed on kimdura, a special high gloss tear-resistant paper designed to last a lifetime. The Desk Size and Poster Size have a rigid vinyl lamination and

MULTIPLE ANIMAL ORGANS

metal eyelets in each top corner for convenient wall hanging. The Giant Size is mounted on sturdy wood rods at top and bottom.

S24300 — Skeletal System
S24301 — Muscular System
S24302 — Nervous System
S24303 — Vascular System
S24304 — Digestive System
S24305 — Respiratory System

To order, attach suffix to item number to indicate size desired:
DL — Desk Size, 11 x 14 inches — $12.50 each
PL — Poster Size, 20 x 26 inches — $29.00 each
GW — Giant Size, 42 x 62 inches — $69.00 each

Age Range: High School – College

COMPARATIVE ANAMODS (HEARTS AND BRAINS PACKAGE)

C13200
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Model
Available as Set
Available Individually
Available for Loan
Price: $19.95 each/$34.00 set

These comparative models emphasize the dramatic changes that have occurred in the development of the hearts and brains of fish through mammals. Each organ model, printed on durable vinyl, provides a detailed 3-D view of the organ as it evolved. This set includes both Vertebrate Hearts and Vertebrate Brains. Each includes five models and a plastic stand to display the set.

C13022 Comparative Vertebrate Hearts $19.95
C13023 Comparative Vertebrate Brains $19.95

Age Range: Grade 7 – College

CONCEPTS IN LIFE SCIENCE SERIES

4FCK-1112-A
Intellimation
Tel: (800) 346-8355/(805) 968-2291
Fax: (805) 968-8899

Computer Program
Available as Set
Available Individually
Price: $55.00 each/$169.00 set

Bring science to life with this three-part interactive program.
Dennis Payne, Integrated Learning Systems, Inc.

Students will visualize and explore life science with this interactive multimedia program. Broken into three month-long programs of study, the program encourages independent exploration of topics and provides instant user-feedback. A student guide, teacher guide, and interactive lessons are included with each unit. Plus, an optional Class Manager program saves, analyzes, and reports student progress throughout the year. The following programs are included:

Cell Structure and Process
Single copy: 5CKF-665-A $39.00
Site license: 5CKF-665-C $169.00

Circulation, Digestion and Breathing
Single copy: 5CKF-666-A $39.00
Site license: 5CKF-666-C $169.00

Nerves, Muscle and Bone
Single copy: 5CKF-667-A $39.00
Site license: 5CKF-667-C $169.00

Class Manager
Single copy: 5CKF-669-A $29.00
Site license: 5CKF-669-C $119.00
Single copy of the series: 5CKF-1112-A $109.00
Site license for the series: 5CKF-1112-C $309.00

Computer Requirements:
Mac: 4MB RAM or higher
System 6.0.5 or higher
System 7 compatible

Age Range: Grades 6 – 12

DISSECTION & ANATOMY VIDEO TAPES - SERIES

Fisher-EMD
Tel: (800) 955-1177/(312) 378-7770
Fax: (312) 378-7174

Video
Price: $155.00 each

You will have a powerful tool at your fingertips when you bring these educational videotapes of actual dissections into your classroom. These videos are versatile teaching aids and can be used as alternatives to actual dissections.

This series presents students with a close-up view of the special dissection procedures used for each particular organ. Proper dissection techniques are followed by a comprehensive review of the internal anatomy and physiology of the organ. A series of specific review questions is included with each video.

S17618K — Dissection & Anatomy of the Brain (22:16) — $155.00

S17618L — Dissection & Anatomy of the Eye (15:44) — $155.00

S17618M — Dissection & Anatomy of the Heart (14:20) — $155.00

Each video comes with a protective storage case.

Age Range: High School – College

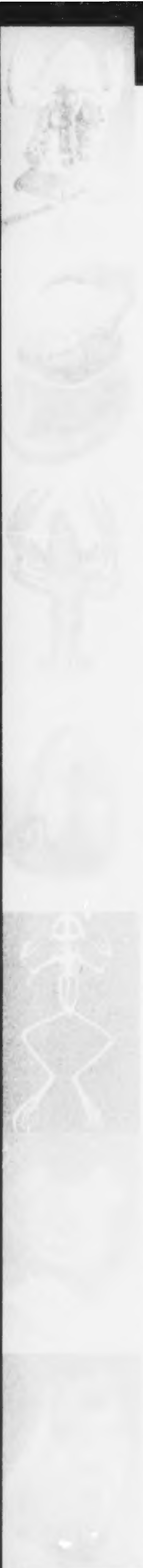
FROG ANATOMY SERIES

4FCH-672-A
Intellimation
Tel: (800) 346-8355/(805) 968-2291
Fax: (805) 968-8899

Computer Software
Available as Set
Available Individually
Price: $99.00

A HyperCard series focusing on lab preparation for specific frog anatomical structures.
Philip Stephens, Villanova University

Site series: 4FCH-672-C $335.00



MULTIPLE ANIMAL ORGANS

Frog Gastrocnemius Muscle
Single copy: 4FCH-131-A $29.00
Site license: 4FCH-131-C $99.00

Frog Heart
Single copy: 4FCH-132-A $29.00
Site license: 4FCH-132-C $99.00

Frog Sciatic Nerve
Single copy: 4FCH-133-A $29.00
Site license: 4FCH-133-C $99.00

Water and Ion Movement Across Frog Skin
Single copy: 4FCH-223-A $29.00
Site license: 4FCH-223-C $99.00

Computer Requirements:
Mac: 1MB RAM or higher
System 6.0.5 or higher
HyperCard 2.0 or higher
System 7 compatible

Age Range: College

GIANT HUMAN ANATOMY CHARTS – (COMPLETE SERIES)

1580
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Chart
Price: $498.00/$698.00 (series)

These 15 giant-scale charts are anatomical masterpieces, lithographed in brilliant colors to maximize understanding of complex body organs and systems. All illustrations afford excellent classroom visibility, and the striking three-dimensional effects add depth and perspective, making it easier to visualize structural relationships and anatomical complexities. Artistic techniques include "transparent" portrayals, greatly magnified inset "blow-ups,"schematic representations, and three-dimensional views from a variety of perspectives and postures. The functions of the major parts of the human anatomy are clearly shown, and a detailed identification key is printed beside each illustration.

All charts measure 44 x 72 inches (112 x 183 cm) and are available individually or as a complete collection.

1581 — Skeletal and Muscular Systems, Anterior View (2 figures)
1582 — Skeletal and Muscular Systems, Posterior View (2 figures)
1583 — Circulatory System (4 figures)
1584 — Schemes of Circulation: Systemic, Pulmonary, Portal and Capillary (3 figures)
1585 — The Heart (5 figures)
1587 — Lymphatic System (4 figures)
1594 — Organs of Chest and Abdomen (4 views)
1586 — Topography of Organs (4 views)
1589 — Digestive System (3 figures)
1588 — Nervous System (3 figures)
1595 — Human Brain (9 views)
1592 — Head, Neck, Throat and Skin (12 figures)
1591 — Eye and Ear (11 figures)
1590 — Urogenital System (6 figures)
1593 — Male and Female Pelvis (10 views — includes pregnancy)

To Order Single Charts:
Specify catalog number shown plus appropriate suffix to indicate your choice of mounting option.

For Single Charts with Hang-up Mount:
Add suffix (-10) to catalog number. Chart is mounted with rods top and bottom with loops for hanging. $49.00 each.

For Single Charts with Spring Roller Mount:
Add suffix (-14) to catalog number. Chart is mounted with individual spring roller attached to steel backboard. $64.00 each.

To Order Complete Series:
1580-32 — Multi-Chart Roller System. Two complete assemblies are included. Part A consists of the first 7 charts. Part B includes the remaining 8 charts. $698.00
1580-43 — Flip-Charthead with Mobile Disc Base. $498.00

Age Range: High School – College

GIANT HUMAN ANATOMY CHARTS – ORGANS OF CHEST & ABDOMEN

1594
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Chart
Available as Set
Available Individually
Price: $49.00/$64.00

This giant-scale chart is an anatomical masterpiece, lithographed in brilliant colors to maximize understanding of the internal organs of the chest and abdomen. Its lifesize three-dimensional views and "transparent" portrayals afford excellent classroom visibility, and make it easier to visualize structural relationships and anatomical complexities. Three life size views illustrate progressively deeper levels of the organs inside the human torso. Transparent "ghost" images provide perspective. Plus, there is a revealing view from behind. A detailed identification key is printed beside each illustration.

This chart measures 44 x 72 inches (112 x 183 cm) and is available individually or as part of a complete set.

To Order Single Charts:
Specify catalog number shown plus appropriate suffix to indicate your choice of mounting option.

For Single Charts with Hang-up Mount:
Add suffix (-10) to catalog number. Chart is mounted with rods top and bottom with loops for hanging. $49.00 each.

For Single Charts with Spring Roller Mount:
Add suffix (-14) to catalog number. Chart is mounted with individual spring roller attached to steel backboard. $64.00 each.

Age Range: High School – College

GIANT HUMAN ANATOMY CHARTS – TOPOGRAPHY OF ORGANS

1586
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Chart
Available as Set
Available Individually
Price: $49.00/$64.00

This giant-scale chart is an anatomical masterpiece, lithographed in brilliant colors to maximize understanding of the positional relationships of the body's internal organs. Its lifesize three-dimensional views and "transparent" portrayals afford excellent classroom visibility, and make it easier to visualize structural relationships and anatomical complexities. The true positioning of the internal organs is clearly illustrated using three life size views plus a larger-than-life transverse section. A detailed identification key is printed beside each illustration.

This chart measures 44 x 72 inches (112 x 183 cm) and is available individually or as part of a complete set.

To Order Single Charts:
Specify catalog number shown plus appropriate suffix to indicate your choice of mounting option.

For Single Charts with Hang-up Mount:
Add suffix (-10) to catalog number. Chart is mounted with rods top and bottom with loops for hanging. $49.00 each.

For Single Charts with Spring Roller Mount:
Add suffix (-14) to catalog number. Chart is mounted with individual spring roller attached to steel backboard. $64.00 each.

Age Range: High School - College

LIFE SCIENCE TOPICS – HUMAN BODY I AND II

William K. Bradford Publishing Co.
Tel: (800) 421-2009
Fax: (508) 263-9375

Computer Program
Price: $45.00 each

These two highly visual and stimulating tutorials will help students work on their life science knowledge and problem-solving skills. Full of detailed, accurate illustrations and simple, engaging animations, these programs also come complete with diagnostic self-tests and include a substantial number of question types (fill-in, multiple choice, matching, labeling, pairing, and vocabulary). Developed to work together, each tutorial focuses on specific areas of the human body.

Computer Requirements:
Mac: 2MB RAM or higher
IBM: PC or 100% compatible, 512K or higher, MS-DOS

Human Body I — Focuses on digestion, respiration, circulation, and excretion.
Single copy: LSH1 $45.00 (school price)
Lab Pack (10): LSH1L $180.00 (school price)
Site license: LSH1N $270.00 (school price)

Human Body II — Focuses on bones and muscles, the nervous system, and reproduction.
Single copy: LSH2 $45.00 (school price)
Lab Pack (10): LSH2L $180.00 (school price)
Site license: LSH2N $270.00 (school price)

Age Range: Grades 6 – 9

THE ANATOMY COLORING BOOK, 2ND EDITION

BK11
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Book
Price: $17.00

This book was designed to provide students, from grade school through college, the opportunity to study the human body with a minimum of rote memorization and a maximum of self-satisfaction. Organized by body systems, each of the 161 illustrated plates is accompanied by instructional text.

This book comes complete with detailed subject index, a glossary and 2 appendices. It is 368 pages, soft bound, and measures 8 x 11 inches.

Age Range: Grade 5 – College

THE CONCISE BRAIN/HEART DISSECTION CHARTS

BioCam Communications Inc.
Tel: (800) 667-3316/(800) 668-2279

Chart
Price: $4.50

This 8 1/2" x 11" chart uses high quality photography and microphotography to depict the complete dissection of the clam. It is printed on both sides of stiff card stock. A plastic sleeve is provided for protection when not in use.

The price is reduced to $3.95 each when ordering 10 or more in any combination.

In Alaska, call collect at (604) 768-4242, or fax at (604) 768-7679.

Age Range: Grades 8 – 12

THE JOHNS HOPKINS ATLAS OF HUMAN FUNCTIONAL ANATOMY

S51345
Fisher-EMD
Tel: (800) 955-1177/(312) 378-7770
Fax: (312) 378-7174

Book
Price: $24.55

Nowhere else will students of anatomy and physiology find so much information about the systems, organs, and functions of the human body so concisely presented as in this Atlas, edited by George D. Zuidema, M.D., Director, Dept. of Surgery. Included are 210 color illustrations by a distinguished medical illustrator, a descriptive text written by members of the faculty of the renowned Johns Hopkins School of Medicine, and an extensive anatomical, physiological and clinical glossary.

The emphasis throughout this original new work is on functional living anatomy — hence, it's a must for every contemporary life science classroom, laboratory, learning center and library. 3rd edition, 144 pages.

Age Range: High School – College

ACTION/REACTION LAB

C6215
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Lab Kit
Price: $152.25

The Action/Reaction Lab is one of a series of labs that were developed by the Lawrence Hall of Science around "real life" areas of interest — for example, breathing, balance, etc. As students follow the activities described in the Teacher's Packet, they learn and apply methods of scientific investigation. In the process, they learn more

MUSCLE AND NERVE

than scientific principles. These activities incorporate math, social studies, communications and language arts skills that will enrich any curriculum or lesson plan.

In this lab, students investigate functions of the nervous system. Using a reaction timer, students can measure response time to various stimuli including light, sound, and touch. Materials are included to allow students to develop their own personal training programs and to chart the results. Ultimately, students relate reaction time to general health and mental alertness. Kit includes: reaction timer, game board and pieces, chart, and packet of activities and Teacher's Guide.

Age Range: High School

BACHIN/BECK ANATOMICAL CHART–MUSCULAR SYSTEM

S24301
Fisher-EMD
Tel: (800) 955-1177/(312) 378-7770
Fax: (312) 378-7174

Chart
Available as Set
Available Individually
Price: $12.95/$29.95/$71.09

This chart, depicting the human muscular system, is printed on kimdura, a special high gloss tear-resistant paper designed to last a lifetime. The Desk Size and Poster Size have a rigid vinyl lamination and metal eyelets in each top corner for convenient wall hanging. The Giant Size is mounted on sturdy wood rods at top and bottom.

To order, attach suffix to item number to indicate size desired:
DL — Desk Size, 11 x 14 inches — $12.95 each
PL — Poster Size, 20 x 26 inches — $29.95 each
GW — Giant Size, 42 x 62 inches — $71.09 each

Age Range: High School – College

BACHIN/BECK ANATOMICAL CHARTS–NERVOUS SYSTEM

S24302
Fisher-EMD
Tel: (800) 955-1177/(312) 378-7770
Fax: (312) 378-7174

Chart
Available as Set
Available Individually
Price: $12.95/$29.95/$71.09

This chart, depicting the human nervous system, is printed on kimdura, a special high gloss tear-resistant paper designed to last a lifetime. The Desk Size and Poster Size have a rigid vinyl lamination and metal eyelets in each top corner for convenient wall hanging. The Giant Size is mounted on sturdy wood rods at top and bottom.

To order, attach suffix to item number to indicate size desired:
DL — Desk Size, 11 x 14 inches — $12.95 each
PL — Poster Size, 20 x 26 inches — $29.95 each
GW — Giant Size, 42 x 62 inches — $71.09 each

Age Range: High School – College

BALANCE AND MOVEMENT LAB

C6216
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Lab Kit
Price: $120.75

The Balance and Movement Lab is one of a series of labs that were developed by the Lawrence Hall of Science around "real life" areas of interest — for example, breathing, balance, etc. As students follow the activities described in the Teacher's Packet, they learn and apply methods of scientific investigation. In the process, they learn more than scientific principles. These activities incorporate math, social studies, communications and language arts skills that will enrich any curriculum or lesson plan.

By performing the Balance and Movement Laboratory exercises, students will be able to relate balance and equilibrium to basic body functions including vision, muscle fatigue, and body position. Activities challenge students to determine the factors involved in safety-related problems associated with balance. Kit includes balance board, balance rope, foot pads, chart, and activity packet with Teacher's Guide.

Age Range: High School

BIOLOGY TUTORIAL SERIES (COMPLETE SET)

4FCH-467-A
Intellimation
Tel: (800) 346-8355/(805) 968-2291
Fax: (805) 968-8899

Computer Program
Available as Set
Available Individually
Price: $125.00 (See below)

A series of introductory HyperCard tutorials for five biology concepts using text and animations.
Philip Stephens, Villanova University

Membrane Potential Tutorial — Includes topics on membrane structure and permeability, the Nernst Equation, Goldman Equation, and Connan Equilibrium.
Single copy: 4FCH-464-A $29.00
Site license: 4FCH-464-C $99.00

Action Potential Tutorial — An introductory tutorial that explains the molecular and ionic basis of the action potential.
Single copy: 4FCH-375-A $29.00
Site license: 3FCH-375-C $99.00

The Chemical Synapse Tutorial — Includes topics on the structure of chemical synapses, quantal theory, presynaptic and postsynaptic inhibition, and facilitation.
Single copy: 4FCH-466-A $29.00
Site license: 4FCH-468-C $99.00

The Muscle Tutorial — A tutorial on the workings of the muscle.
Single copy: 4FCH-468-A $29.00
Site license: 4FCH-468-C $99.00

MUSCLE AND NERVE

Think Tank — A tutorial experiment in chemical synapses, electrical synapses, and no synapses.
Single copy: 4FCH-212-A $29.00
Site license: 43FCH-212-C $99.00

Computer Requirements:
Mac: 1MB RAM or higher
System 6.0.5 or higher
HyperCard 2.0 or higher
System 7 compatible

Single copy of the series: 3FCH-467-A $125.00
Site license for the series: 3FCH-467-C $419.00

Age Range: College

FLEXIBILITY/ STRENGTH LAB

C6218
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Lab Kit
Price: $177.45

The Flexibility/Strength Lab is one of a series of labs that were developed by the Lawrence Hall of Science around "real life" areas of interest — for example, breathing, balance, etc. As students follow the activities described in the Teacher's Packet, they learn and apply methods of scientific investigation. In the process, they learn more than scientific principles. These activities incorporate math, social studies, communications and language arts skills that will enrich any curriculum or lesson plan.

With the unique apparatus in this kit, including a grip tester and limber gauge, students measure their flexibility and muscle strength. The many activities outlined step-by-step in the Teacher's Kit will improve students awareness of their own flexibility and strength. Kit includes flexibility gauge, grip tester, gripper, splints, 3 charts and miscellaneous parts and chart labeling supplies.

Age Range: High School

FLEXICOMP

Intelitool
Tel: (800) 227-3805/(708) 406-1041
Fax: (708) 406-1318

Computer Program
Call for current price

Flexicomp is a hardware/software system that combines a specially designed joint movement transducer and computer interfaced percussion hammer with a powerful software package. Flexicomp allows the user to accurately demonstrate and analyze the reflex arc of many different stretch reflex systems: knee jerk, biceps, triceps, plantar.

Flexicomp features include:

- Accurately quantify stimulus response (degree of deflection)
- Accurately quantify the time intervals involved with the reflex arc such as the latent period and time to the maximal response
- Demonstrate neurological facilitation
- Demonstrate antagonistic dampening
- Compare responses and times of the same stretch reflex systems on different limbs, and compare different stretch reflex systems such as the plantar reflex versus the knee jerk reflex
- Compare the deflections and time intervals of the same stretch reflex systems on different subjects
- General data file manipulation

Includes software, electrodes, A/D interface board, bioamplifier box, all connectors and cables, and manuals.

Apple Systems require an Apple II, II+, IIe or IIgs with a minimum of 64K and one disk drive. Hard copy output requires a printer with graphics capability such as the Apple Imagewriter or Apple Scribe. Printers other than these require a Grappler parallel interface card or an interface card that uses the Grappler command set.

MS-DOS Systems require an IBM PC or PC-compatible with 256K or RAM and CGA or Hercules graphics capability. Flexicomp is supported on the IBM PS/2 Models 25 through 80 and requires a standard IBM game port. The Epson and IBM dot matrix printers are supported.

Age Range: High School – College

FROG GASTROCNEMIUS MUSCLE

4FCH-131-A
Intellimation
Tel: (800) 346-8355/(805) 968-2291
Fax: (805) 968-8899

Computer Program
Available as Set
Available Individually
Price: $29.00 (see below)

A HyperCard series focusing on lab preparation for specific frog anatomical structures.

Computer Requirements:
Mac: 1MB RAM or higher
System 6.0.5 or higher
HyperCard 2.0 or higher
System 7 compatible

Single copy: 4FCH-131-A $29.00
Site license: 4FCH-131-C $99.00

Age Range: College

FROG SCIATIC NERVE

4FCH-133-A
Intellimation
Tel: (800) 346-8355/(805) 968-2291
Fax: (805) 968-8899

Computer Program
Available as Set
Available Individually
Price: $29.00 (see below)

A HyperCard series focusing on lab preparation for specific frog anatomical structures.

Computer Requirements:
Mac: 1MB RAM or higher
System 6.0.5 or higher
HyperCard 2.0 or higher
System 7 compatible

Single copy: 4FCH-133-A $29.00
Site license: 4FCH-133-C $99.00

Age Range: College

66

MUSCLE AND NERVE

GIANT HUMAN ANATOMY CHARTS – NERVOUS SYSTEM

1588
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Chart
Available as Set
Available Individually
Price: $49.00/$64.00

This giant-scale chart is an anatomical masterpiece, lithographed in brilliant colors to maximize understanding of the nervous system. Its lifesize three-dimensional views and "transparent" portrayals afford excellent classroom visibility, and make it easier to visualize structural relationships and anatomical complexities. Color-coding, schematics and transparent "ghosting" techniques aid in depicting the human nervous system. A detailed identification key is printed beside each illustration.

This chart measures 44 x 72 inches (112 x 183 cm) and is available individually or as part of a complete set.

To Order Single Charts:
Specify catalog number shown plus appropriate suffix to indicate your choice of mounting option.

For Single Charts with Hang-up Mount:
Add suffix (-10) to catalog number. Chart is mounted with rods top and bottom with loops for hanging. $49.00 each.

For Single Charts with Spring Roller Mount:
Add suffix (-14) to catalog number. Chart is mounted with individual spring roller attached to steel backboard. $64.00 each.

Age Range: High School – College

GIANT HUMAN ANATOMY CHARTS – SKELETAL & MUSCULAR SYSTEMS, ANTERIOR

1581
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Chart
Available as Set
Available Individually
Price: $49.00/$64.00

This giant-scale chart is an anatomical masterpiece, lithographed in brilliant colors to maximize understanding of the anterior skeletal and muscular systems. Its lifesize three-dimensional views and "transparent" portrayals afford excellent classroom visibility, and make it easier to visualize structural relationships and anatomical complexities. Body contours enhance understanding of positional orientation. A detailed identification key is printed beside each illustration.

This chart measures 44 x 72 inches (112 x 183 cm) and is available individually or as part of a complete set.

To Order Single Charts:
Specify catalog number shown plus appropriate suffix to indicate your choice of mounting option.

For Single Charts with Hang-up Mount:
Add suffix (-10) to catalog number. Chart is mounted with rods top and bottom with loops for hanging. $49.00 each.

For Single Charts with Spring Roller Mount:
Add suffix (-14) to catalog number. Chart is mounted with individual spring roller attached to steel backboard. $64.00 each.

Age Range: High School – College

GIANT HUMAN ANATOMY CHARTS – SKELETAL & MUSCULAR SYSTEMS, POSTERIOR

1582
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Chart
Available as Set
Available Individually
Price: $49.00/$64.00

This giant-scale chart is an anatomical masterpiece, lithographed in brilliant colors to maximize understanding of the posterior skeletal and muscular systems. Its lifesize three-dimensional views and "transparent" portrayals afford excellent classroom visibility, and make it easier to visualize structural relationships and anatomical complexities. Body contours enhance understanding of positional orientation. A detailed identification key is printed beside each illustration.

This chart measures 44 x 72 inches (112 x 183 cm) and is available individually or as part of a complete set.

To Order Single Charts:
Specify catalog number shown plus appropriate suffix to indicate your choice of mounting option.

For Single Charts with Hang-up Mount:
Add suffix (-10) to catalog number. Chart is mounted with rods top and bottom with loops for hanging. $49.00 each.

For Single Charts with Spring Roller Mount:
Add suffix (-14) to catalog number. Chart is mounted with individual spring roller attached to steel backboard. $64.00 each.

Age Range: High School – College

ISOLATED SQUARE WAVE STIMULATOR

Intelitool
Tel: (800) 227-3805/(708) 406-1041

Lab Kit
Call for current price

Manufactured by Phipps & Bird, this unit is isolated from ground so that muscle twitch can be safely demonstrated on humans.

This stimulator is safe to use on human subjects and was designed specifically to be used with Physiogrip. The stimulator is isolated so that muscle physiology can be safely demonstrated on humans.

Stimulus output may be set for automatic continuous, manual continuous or manual single pulse operation.

Age Range: High School – College

MUSCLE AND NERVE

MAJOR SKELETAL MUSCLES AND THEIR ACTIONS

1249
Teaching Films
Tel: (800) 421-2363
Fax: (708) 328-6706

Film 19 min.
Price: $295.00

Produced by Western Wisconsin Technical College, this program illustrates both the location and action of the major skeletal muscles. The muscles discussed include those responsible for facial expression, stability and movement of the shoulder and arm, the movement of the leg and foot, and the muscles of the abdomen. A discussion of the ways of naming muscles is also included.

Age Range: High School A/P – College

NERVOUS SYSTEM MODEL ACTIVITY SET

C2674
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Model, Guide, Color Transparency
Available as Set
Available Individually
Price: $89.25

Introduce your students to anatomy with this popular model, shown in raised relief, which illustrates the structure of the central and peripheral nervous systems. A cutaway of the head region provides a close examination of the human brain and a removable transparent overlay defines the brain lobes. Plus, diagrams illustrate the location of the brain, spinal cord, and spinal nerves throughout the human body. Dendrites, axon, and synapsis are also illustrated.

Activity Set consists of an 18" H x 24" W model, an activity guide and a transparency.

Age Range: Grades 7 – 12

PHYSIOGRIP

Intelitool
Tel: (800) 227-3805/(708) 406-1041
Fax: (708) 406-1318

Computer Program
Call for current price

Physiogrip is a hardware/software system that combines a specially designed displacement transducer with a powerful software package. Physiogrip is a versatile and easy to use tool and may be used to measure muscle motion of the: Human flexor digitorum, turtle heart, other muscles.

Physiogrip features include:

- Record real time plots of the muscle twitches
- Examine twitch data via time displacement and velocity analysis
- Print hard copy plots of twitch data, and data analysis screens
- Save and retrieve muscle twitch data for subsequent study
- Disk file management

Includes software, pistol grip transducer, all cables, stimulator probe, flat plate electrode, electrode gel, assorted springs, manuals, and demonstration video tape.

Apple Systems require an Apple II, II+, IIe or IIgs with a minimum of 64K and one disk drive. Hard copy output requires a printer with graphics capability such as the Apple Imagewriter or Apple Scribe. Printers other than these require a Grappler parallel interface card or an interface card that uses the Grappler command set.

MS-DOS Systems require an IBM PC or PC-compatible with 256K or RAM and CGA or Hercules graphics capability. Cardiocomp requires an available expansion slot. Physiogrip is supported on the IBM PS/2 Models 25 through 80 and requires a standard IBM game port. The Epson and IBM dot matrix printers are supported.

Age Range: High School – College

SENSES

THE FUNCTIONAL NEUROANATOMY SERIES

Teaching Films
Tel: (800) 421-2363
Fax: (708) 328-6706

Films
Price: $295.00 each/$1,000.00 set

Complete and detailed, this series systematically examines the physiology and function of the human neurological system. Computer illustrations, live models, and skeletal models are used to illustrate important points. The series was produced by Drs. Montemurro, Singh, and Haase of the Anatomy Department at the University of Western Ontario.

Part I: Pathway for Discriminative Touch Sensation (17 min.), #1233

Part II: Pathway for Proprioceptive Sensation (21 min.), #1234

Part III: Pathway for Pain, Temperature, and Crude Touch Sensation (18 min.), #1235

Part IV: Pathways for General Sensations from the Head — The Trigeminal Nerve (31 min.), #1243

Part V: Motor Pathways (20 min.), #7413

A special series price of $1,000.00 is offered to those who order from this catalog.

Age Range: High School A/P – College

ANAMOD – EAR

C13005
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Model
Available as Set
Available Individually
Price: $10.95

Anamods are anatomical models printed in full color on durable vinyl. Each organ model is made up of die-cut pieces that easily fit together to create a detailed 3-D model. Anamods are number-coded and keyed to a comprehensive Teacher's Guide, included with each model. An attractive plastic stand is also included with each Anamod.

Age Range: Grade 7 – College

SENSES

ANAMOD - EYE

C13004
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Model
Available as Set
Available Individually
Price: $10.95

Anamods are anatomical models printed in full color on durable vinyl. Each organ model is made up of die-cut pieces that easily fit together to create a detailed 3-D model. Anamods are number-coded and keyed to a comprehensive Teacher's Guide, included with each model. An attractive plastic stand is also included with each Anamod.

Age Range: Grades 7 – College

BEEF EYE DISSECTION

A5VH 1219
Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

Video w/Teacher's Guide 16 min
Available as Set
Available Individually
Price: $150.00

This high quality video illustrates a start-to-finish dissection. Utilizing the most up-to-date equipment and techniques, the video follows every step of the dissection process. Following the organization of most lab manuals, this program can be used as a replacement for live animal dissection. Full-color close-ups correlate to a careful narrative to make it easy for students to follow along. Especially difficult-to-locate anatomical structures are identified by graphics and pointers. This program is accompanied by a printed script with numbered frame references and a complete glossary.

Age Range: High School – College

COCHLEAR ANATOMY

4FCH-245-A
Intellimation
Tel: (800) 346-8355/(805) 968-2291
Fax: (805) 968-8899

Computer Program
Price: $45.00

An animated introductory and dissecting tool for the inner ear.
Peter Santi, Eric Webster, University of Minnesota Medical School

Introduce your students to the workings of the inner ear as they dissect the cochlea on the computer screen. Using the program's animations, students will prepare cochlear tissue for light, transmission, and scanning electron microscopy. This program includes over 70 digitized images and 24 diagrams showing anatomical and functional features of the cochlear from its position in the skull to its cellular components. Micrographs highlight and identify more than 40 digitized waveforms including speech, tones, music, and certain types of hearing disorders.

Computer Requirements:
Mac: 1MB RAM or higher
System 6.0.5 or higher
HyperCard 2.0 or higher
System 7 compatible

Single copy: 4FCH-245-A $45.00
Site license: 4FCH-245-C $179.00

Age Range: College

DISSECTION & ANATOMY OF THE EYE

S17618L
Fisher-EMD
Tel: (800) 955-1177/(312) 378-7770
Fax: (312) 378-7174

Video
Available as Set
Available Individually
Price: $155.00

You will have a powerful tool at your fingertips when you bring this educational videotape of an actual eye dissection into your classroom. This video is a versatile teaching aid and can be used as an alternative to an actual dissection. This video presents students with a close-up view of the special dissection procedures used for the eye. Proper dissection techniques are followed by a comprehensive review of the internal anatomy and physiology of the eye. A series of specific review questions is included.

Each video comes with a protective storage case.

Age Range: High School – College

FUNCTIONING EYE MODEL

AP45 (Large), AP46 (Small)
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $554.00/$397.00

Your own eye focuses on near or distant objects by altering the shape of its internal lens. This has been impossible to duplicate in a model — until now! Simulating the visual performance of the human eye, you can control the shape of the flexible lens within this ingenious model, changing the focus of the images projected onto its retina.

Molded of optically clear silicone elastomer, the lens is a water-filled chamber connected by tubing to a syringe. By manipulating the plunger, water can be forced into the lens, increasing its thickness and curvature, or withdrawing from it, flattening its profile, changing its focus.

But that's not all! You can even lengthen or shorten the eyeball itself to demonstrate nearsightedness (myopia), farsightedness (hyperopia), and normal vision. Used in conjunction with a bright light source, such as an ordinary slide projector, you can dramatically demonstrate:

- Accommodation (focusing on near objects by increasing lens curvature)
- Nearpoint of vision
- Yellow spot and blind spot
- Presbyopia (age-related lack of accommodation due to loss of lens elasticity)
- Myopia
- Hyperopia
- Use of corrective lenses

SENSES

The large model measures 18 x 12 inches (450 x 300 mm). The small model measures 12 x 7 inches (320 x 180 mm). Both models come complete with illustrated instructions, external corrective lenses — one convex, one concave — lens holder and projection object on stand.

Age Range: High School – College

GIANT FIVE-PART EYEBALL

A22
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $249.00

Overshadowing ordinary eye models, which range from 3 to 5 times life size, this giant non-breakable vinyl plastic replica is 6 times life size and is packed with a greater range of useful teaching features.

The exterior of the eyeball features the cornea, through which the iris and pupil are visible, the large lacrimal (tear) gland, attachments for all six muscles which move the eyeball, the optic nerve, and surrounding blood vessels. To study interior features, the eyeball divides into hemispheres. The iris/cornea unit can be removed as can the functional lucite lens, which magnifies and forms inverted images.

You can sight through the transparent vitreous body. Removing the vitreous body exposes the choroid coat and retina complete with the blind spot and the yellow spot containing the fovea. Rods, cones, and other retinal microstructures are detailed in a highly magnified diagrammatic cross section.

42 hand-coded features are defined in the accompanying key. The Five-Part Eyeball measures 6 x 6 x 6 inches (15 x 15 x 15 cm) and is mounted on a hand-rubbed hardwood base.

Age Range: High School – College

GIANT HUMAN ANATOMY CHARTS – EYE AND EAR

1591
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Chart
Available as Set
Available Individually
Price: $49.00/$64.00

This giant-scale chart is an anatomical masterpiece, lithographed in brilliant colors to maximize understanding of the eye and ear. Its lifesize three-dimensional views and "transparent" portrayals afford excellent classroom visibility, and make it easier to visualize structural relationships and anatomical complexities. These eleven illustrations clearly depict the structural anatomy as well as the functional physiology of our two most important senses. A detailed identification key is printed beside each illustration.

This chart measures 44 x 72 inches (112 x 183 cm) and is available individually or as part of a complete set.

To Order Single Charts:
Specify catalog number shown plus appropriate suffix to indicate your choice of mounting option.

For Single Charts with Hang-up Mount:
Add suffix (-10) to catalog number. Chart is mounted with rods top and bottom with loops for hanging. $49.00 each.

For Single Charts with Spring Roller Mount:
Add suffix (-14) to catalog number. Chart is mounted with individual spring roller attached to steel backboard. $64.00 each.

Age Range: High School – College

GIANT HUMAN ANATOMY CHARTS – HEAD, NECK, THROAT & SKIN

1592
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Chart
Available as Set
Available Individually
Price: $49.00/$64.00

This giant-scale chart is an anatomical masterpiece, lithographed in brilliant colors to maximize understanding of the head, neck, throat and skin. Its lifesize three-dimensional views and "transparent" portrayals afford excellent classroom visibility, and make it easier to visualize structural relationships and anatomical complexities. These twelve illustrations are perfect for understanding the mechanisms of voice and speech production, and the senses of taste, touch and smell. A detailed identification key is printed beside each illustration.

This chart measures 44 x 72 inches (112 x 183 cm) and is available individually or as part of a complete set.

To Order Single Charts:
Specify catalog number shown plus appropriate suffix to indicate your choice of mounting option.

For Single Charts with Hang-up Mount:
Add suffix (-10) to catalog number. Chart is mounted with rods top and bottom with loops for hanging. $49.00 each.

For Single Charts with Spring Roller Mount:
Add suffix (-14) to catalog number. Chart is mounted with individual spring roller attached to steel backboard. $64.00 each.

Age Range: High School – College

GIANT THREE-PART EAR

A33
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $249.00

Dwarfing ordinary ear models, this non-breakable polymer reproduction depicts the human organ of hearing and balance scaled to 5 times life size.

The surrounding temporal bone of the skull has been sagittally sectioned along the entire length of the auditory canal and

SENSES

Eustachian tube. This simplifies tracing the path of soundwaves entering the ear and makes it quite evident how pressure is equalized on both sides of the eardrum. The overlying pertous portion of the temporal bone has also been cut away exposing the entire middle ear chamber and the labyrinth. Two of the middle ear ossicles, the malleus (hammer) and incus (anvil), and the attached see-through tympanic membrane lift out for hands-on study. Also detachable is the entire labyrinth unit consisting of the cochlea, vestibule, semicircular canals, auditory nerve and the third ossicle, the stapes (stirrup).

Two of the three semicircular canals are made of transparent plastic tubing filled with colored fluid representing the endolymph. A visible air bubble in each will shift position when tilted, demonstrating the function of the canals in maintaining equilibrium. A spiral cutaway of the cochlea shows its three canals in contrasting colors to enhance teaching the concept of pitch.

36 hand-numbered features are identified in the accompanying key. The overall dimensions of the Giant Ear are 16 x 11 x 7 inches (41 x 28 x 18 cm).

Age Range: High School – College

INSIGHT™

4FCH-403-A
Intellimation
Tel: (800) 346-8355/(805) 968-2291
Fax: (805) 968-8899

Computer Program
Price: $39.00

An interactive HyperCard introduction to visual phenomena.
John Baro, Stephen Lehmkuhle, Michael Sesma, University of Missouri

This program can be used in the lab portions of experimental psychology and optometry classes. It demonstrates visual phenomena not easily understood from standard textbooks or lectures. Students manipulate parameters and immediately see the resulting effect.

Computer Requirements:
Mac: 2MB RAM or higher
(4MB for System 7)
System 6.0.5 or higher
HyperCard 2.3 or higher
System 7 compatible

Single copy: 4FCH-403-A $39.00
Site license: 4FCH-403-C $159.00

Age Range: High School – College

INSIGHT™ 2.0 IN COLOR

4FCH-561-A
Intellimation
Tel: (800) 346-8355/(805) 968-2291
Fax: (805) 968-8899

Computer Program
Price: $39.00

An interactive HyperCard introduction to visual phenomena.
John Baro, Stephen Lehmkuhle, Michael Sesma, University of Missouri

This program can be used in the lab portions of experimental psychology and optometry classes. It demonstrates visual phenomena not easily understood from standard textbooks or lectures. Students manipulate parameters and immediately see the resulting effect.

Computer Requirements:
Mac: 2MB RAM or higher
(4MB for System 7)
System 6.0.5 or higher
HyperCard 2.3 or higher
System 7 compatible

Single copy: 4FCH-403-A $39.00
Site license: 4FCH-403-C $159.00

Age Range: High School – College

MacRETINA

4FCH-754-A
Intellimation
Tel: (800) 346-8355/(805) 968-2291
Fax: (805) 968-8899

Computer Program
Price: $29.00

A simulation of visual processing.
Richard Olivo, Smith College

Enhance your students' conceptual understanding of visual processing with this outstanding simulation program. MacRetina simulates, in real time, the firing of a retina ganglion cell. Students can experiment with and visualize the process in ways never before possible.

Computer Requirements:
Mac: 1MB RAM or higher
System 6.0.5 or higher
System 7 compatible

Single copy: 4FCH-754-A $29.00
Site license: 4FCH-754-C $99.00

Age Range: College

SENSES

Ventura Educational Systems
Tel: (800) 336-1022
Fax: (805) 473-7382

Computer Program
Price: $59.95

This computer program encourages students to explore the fascinating workings and intricate parts of the human sense organs. By using this program, students gain an in-depth understanding of the mysteries of human perception. The program includes a learning game, a database and a multiple choice quiz designed to make learning fun. Detailed drawings of the parts of the five sense organs help students learn to recognize the names of the intricate structures and their functions.

Computer Requirements:
Mac: LC or higher — 1MB RAM
Apple: 2E or higher — 64K/128K for ProDOS version
IBM: PC or 100% compatible — 512K w/CGA graphics

Lab Pack (5): $109.95
Lab Pack (10): $159.95
Network (30 stations): $359.95

Age Range: Grades 7 – 12

SIGHT AND SOUND LAB

C6213
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Lab Kit
Price: $62.95

SENSES

The Sight and Sound Lab is one of a series of labs that were developed by the Lawrence Hall of Science around "real life" areas of interest — for example, breathing, balance, etc. As students follow the activities described in the Teacher's Packet, they learn and apply methods of scientific investigation. In the process, they learn more than scientific principles. These activities incorporate math, social studies, communications and language arts skills that will enrich any curriculum or lesson plan.

In this lab, students use specially designed equipment to investigate the structure and function of two important senses: sight and sound. Topics include: how a lens affects vision, measuring field of vision, capturing soundwaves. Kit contains: vision disk, pinhole viewer, lenses, eye chart, masks, flashlight, rubber balls, and extensive packet of activities and Teacher's Guide.

Age Range: High School

THE EAR TEACHING PROGRAM

731

Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model w/ Teaching Program
Price: $320.00

Designed for use with the Denoyer-Geppert Giant Three-Part Ear Model (#133), this exclusive teaching program can be readily adapted for use with almost any ear model.

The program is made up of five teaching components:

1. Audio cassette
2. Captioned filmstrip
3. Illustrated instruction manual with 24 student activities
4. Set of 6 reproducible Black Line Master activity sheets. Teacher Key is printed on the reverse.
5. Giant Three-Part Ear (#133)

Program materials are conveniently packaged in a jumbo ring binder. The kit is also available without the model for $70.00 (#734).

Age Range: High School – College

THE EYE TEACHING PROGRAM

771

Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model w/ Teaching Program
Price: $322.00

Designed for use with the Denoyer-Geppert Giant Five-Part Eye Model (#102), this exclusive teaching program can be easily adapted for use with other eye models.

The program consists of five teaching components:

1. Audio cassette
2. Captioned filmstrip
3. Illustrated instruction manual with 24 student activities

4. Set of 7 reproducible Black Line Master activity sheets with answers printed on the reverse
5. Giant Five-Part Eyeball (#102)

Program materials are conveniently packaged in a jumbo ring binder. The kit is also available without the model for $70.00 (#774).

Age Range: High School – College

SKELETON

GIANT THREE ROOT MOLAR

A87

Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $315.00

Our largest tooth model, molded of unbreakable plastic, portrays a molar from the upper jaw 15 times normal size for ease of study.

The molar divides longitudinally to expose its interior from crown to root. The pulp, from one half of the tooth, is removable. The crown, from the other half of the tooth, is extractable. Three additional interchangeable sections demonstrate advancing stages of cavities.

Principal structures, hand numbered on the model, are identified in the accompanying key. The tooth pivots on a hardwood base and measures 7 x 7 x 13 inches (18 x 18 x 33 cm).

Age Range: High School – College

BACHIN/BECK ANATOMICAL CHARTS–SKELETAL SYSTEM

S24300

Fisher-EMD
Tel: (800) 955-1177/(312) 378-7770
Fax: (312) 378-7174

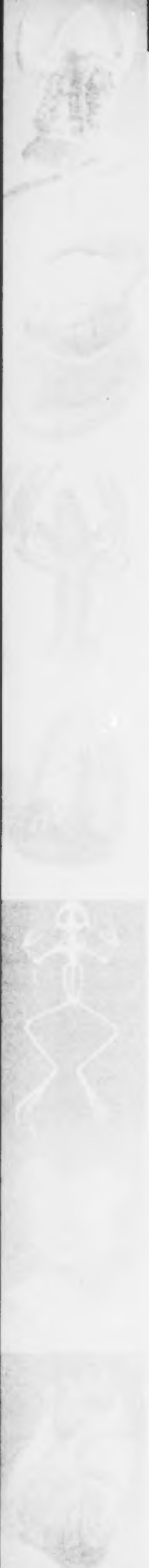
Chart
Available as Set
Available Individually
Price: $12.95/$29.95/$71.09

This chart, depicting the human skeletal system, is printed on kimdura, a special high gloss tear-resistant paper designed to last a lifetime. The Desk Size and Poster Size have a rigid vinyl lamination and metal eyelets in each top corner for convenient wall hanging. The Giant Size is mounted on sturdy wood rods at top and bottom.

To order, attach suffix to item number to indicate size desired:

DL — Desk Size, 11 x 14 inches — $12.95 each
PL — Poster Size, 20 x 26 inches — $29.95 each
GW — Giant Size, 42 x 62 inches — $71.09 each

Age Range: High School – College



SKELETON

CERVICAL SPINE, MEDICAL QUALITY

265-72
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $69.00

Consisting of the seven cervical vertebrae and intervertebral disks with the occipital bone of the skull, this flexibly-articulated replica includes the spinal cord, nerve roots, arteries and medulla oblongata. It demonstrates the pivoting of the atlas and axis, and the natural twisting and bending of the neck.

This model is mounted on a vertical display stand. Its dimensions are 5 x 6 x 8 inches (12 x 15 x 19 cm) overall.

Age Range: High School – College

DELUXE MEDICAL QUALITY "ALL-IN-ONE" SKELETON

Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $689.00

Truly versatile, these deluxe skeletons incorporate all the exquisite detailing plus a combination of all the unique features of each of our special medical quality skeletons, all-in-one attractively priced skeletal model.

Painted muscle attachments, more than 300 numbered features, flexible spine with complete spinal cord, nerve branches, vertebral arteries, lumbar disk prolapse, and flexible life-like joint ligaments of the right shoulder, elbow, hip, and knee — this one skeleton has it all! Complete with identification manual.

Choice of mounting styles:
Rod mount with swivel caster stand — 207-13

Suspension ring mount without stand — 207-13/1

Age Range: College – Medical

ECONOMY SUSPENSION RING SKELETON

283-10B
Denoyer- Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $513.00

Sharing virtually all components with our Medical Grade Suspension Skeleton (206-10A), our economy version has an unsectioned skull, and fused carpal and tarsal bones. All the other features are identical. A set of 12 Black Line Copy Masters is included.

This skeleton is supplied without a stand.

Age Range: High School – College

FIRST QUALITY SKELETONS

Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $349.00

This skeleton is suitable for all but the most intensive studies. The skull is less detailed, but is otherwise similar in all respects to our Medical Quality Skeleton. Its spring-mounted mandible and calvaria detach.

This skeleton is 67 inches (170 cm) tall, and comes with a set of 12 Black Line Masters.

Choice of mounting styles:
Rod mount on swivel caster stand — 221
Suspension ring mount without stand — 221-10/1

Age Range: Grades 7 – College

FLEXIBLE VERTEBRAL COLUMN

264-58/1
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $113.00

This medical quality model includes pelvis, occipital bone, nerve roots, vertebral arteries, and herniated disk. A display stand is sold separately.

Age Range: High School – College

HUMAN SKELETAL ANATOMY COLLECTION (COMPLETE SET)

A5VH 1065
Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

Videos w/Teacher's Guides Avg. 25 min.
Available as Set
Available Individually
Price: $60.00 each/$360.00 set

These videos are the next best thing to having a human skeleton in your classroom. Featuring detailed studies of sections of the human skeleton, they are excellent for use as introductions or as reviews.

A5VH 1066 — Anatomy of the Skull I: Superior, Posterior, and Lateral Views
Students are introduced to three views of the skull. (17 min.)

A5VH 1067 — Anatomy of the Skull II: Frontal and Lateral Aspects
Identification of the structures of the frontal aspects of the human skull. (21 min.)

A5VH 1068 — Anatomy of the Skull III: Basal Aspect
An examination of the structures of the basal aspect of the skull as well as the interior surfaces of the mandible, the teeth, hyoid bone, and the skull joints. (36 min.)

A5VH 1069 — Anatomy of the Skull IV: Interior of the Cranial Cavity
A view of the interior of the cranial cavity with the calvarium removed. (27 min.)

A5VH 1070 — Anatomy of the Thorax
Identification of the 12 pairs of ribs and associated costal cartilages as well as the sternum, clavicles, and sternoclavicular joints. (34 min.)

A5VH 1071 — Anatomy of the Upper Limbs
A presentation of the structure of the pectoral girdle, arm, forearm, and hand. Also

SKELETON

discusses the relationship between the joints and the motions of the upper limb. (46 min.)

A5VH 1072 — Anatomy of the Vertebral Column
Examines the 33 vertebrae, interarticular joints, and ligaments that make up the vertebral column. Also explores the atlanto-occipital and sacroiliac joints as well as the motions and curvatures of the vertebral column. (57 min.)

Age Range: High School

THE INTERACTIVE SKELETON

Denoyer-Geppert
Tel: (800) 621-1014
Fax: (773) 561-4160

CD-ROM
Price: $62.00

Created from actual CT, MRI and ultrasound scans, this program provides a true-to-life 3-dimensional replica with muscle and tendon attachments visible.

Completely interactive, special pan, tilt, and zoom controls let you view the human skeleton or any portion of it from all angles and all directions.

Additional special functions include: "dissection" which gives a dissected view of the selected bone and surrounding structures, and the "exam" feature which lets you work through a series of questions covering each part of the skeleton.

Age Range: High School – College

LUMBAR VERTEBRAE WITH INTERCHANGEABLE HERNIATED DISKS

266-76
Denoyer-Geppert
Tel: (800) 621-101/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $35.00

This life size, 5-part plastic replica depicts the 4th and 5th lumbar vertebrae. It includes the spinal cord with nerve branches, and two interchangeable intervertebral disks. One disk exhibits a central hernia, the other a dorso-lateral hernia.

This medical quality model measures 5 x 5 x 5 inches (12 x 12 x 13 cm) overall, and is mounted on a vertical display stand.

Age Range: High School – College

MEDICAL QUALITY SKELETON

Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $470.00

Cast from the bones of a perfect adult male skeleton, all fissures and fossae are faithfully reproduced in this skeleton. The skull and teeth are especially well detailed. The calvaria detaches for neurocranial studies. Spring mounted, the mandible also detaches.

This model is 67 inches (170 cm) tall.

Choice of mounting styles:
Rod mount on swivel caster stand — 200-10/5
Suspension ring mount without stand — 200-10/1

Age Range: High School – College

MEDICAL QUALITY SKELETON WITH JOINT LIGAMENTS

201-12
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $689.00

Our Medical Quality Skeleton is fitted on the right side with life-like flexible ligaments of the shoulder, elbow, hip and knee, which approximate the natural appearance and motions of real joints.

This skeleton is rod-mounted on a swivel caster stand.

Age Range: College – Medical

MEDICAL QUALITY SKELETONS WITH PAINTED MUSCLE ATTACHMENTS

Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $643.00

We've added hand-painted muscle attachments — origins red, insertions blue — on the right half of our Medical Quality Skeleton. For the sake of clarity, the deep iliocostalis and longissimus muscles are painted in contrasting shades (yellow and green).

On the left half, more than 300 skeletal features are number coded. An identification manual is included.

Choice of mounting styles:
Rod mount on swivel caster stand — 204-11
Suspension ring mount, without stand — 204-11/1

Age Range: College – Medical

MEDICAL QUALITY SKULL W/DISSECTED MANDIBLE

255
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $193.00

This Numbered Medical Skull has the following enhancements: A dissection of the mandible which exposes the roots of the teeth, and the nerves and blood vessels supplying them; skull sutures highlighted with ocher stain; and, within the cranial vault, the paths of significant blood vessels and sinuses of the meninges are traced in color and numbered. Some 104 internal and external number-coded features are identified in the accompanying key.

Age Range: High School – College

OUR FLEXIBLE FRAME: THE SKELETAL AND MUSCULAR SYSTEMS

A5VH 1076
Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

Video w/Teacher's Guide 22 min
Price: $90.00

Can you imagine what life would be like without bones to hold us up or muscles to help us move? This program shows you just what an important role the skeletal and muscular systems play in our lives. Not only do they give us shape and allow us to move but they also provide such functions as protecting internal organs, producing cells, and providing places for the muscles to attach. The more than 640 muscles in the human body are working all the time — even when the body is just standing still! An excellent exploration of the intricate network of bones and muscles which form our flexible frame. The teacher's guide includes a reproducible worksheet.

"The technical and educational quality of the tape is state of the art...an excellent addition to health education units and biology lessons concerning the human body."
Science Books & Films
Best of the Year
Media and Methods

Age Range: Grades 5 – 9

REAL BONE HUMAN SKULLS

Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $398.00-$875.00

This product is perfect for definitive studies of the human skull. Since each is a unique creation, no two are exactly alike, and minor imperfections may be present. The calvaria is sectioned (frequently as a V-shaped autopsy cut) and pinned. It detaches for neurocranial studies.

Choose from three grades:

453-BQ — Best Quality
Only minor imperfections, if any. Little or no stains or discoloration. Dentition is complete - 28 to 32 teeth. $824.00

457 — Best Quality, Numbered
Exactly the same as Best Quality Skull, but with all the bones and other major features on one side hand-numbered. Supplied with identification key. $875.00

453-MQ — Second Quality
Less perfect than Best Quality. May have minor stains or discoloration. Partial detention - 15 to 27 teeth. Suitable for all but the most demanding applications. A Best-Buy. $554.00

453-PQ — Student Quality
Imperfections, especially in the ethmoid or nasal areas, are likely. Few if any teeth. Many exhibit typical geriatric phenomena. Suitable for routine studies. $398.00

Age Range: High School – College

SET OF FIVE JOINT TYPES

230
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $212.00

This model set encompasses all three functional joint types — immovable (synarthroses), slightly movable (amphiarthroses), and freely movable (diarthroses), as well as the three structural types — fibrous, cartilaginous, and synovial. This full-scale series of plastic reproductions uses the following examples to illustrate the different structural and functional joints:

Fibrous Joints: skull — sutures, synarthrotic (immovable); teeth in sockets — gomphoses, synarthrotic (immovable), one tooth extracts (tethered to prevent loss); tibia-fibula joint — syndesmosis, amphiarthrotic (slightly movable).

Cartilaginous Joints: vertebral joint — symphysis, amphiarthrotic (slightly movable).

Synovial Joint: hip joint — ball and socket, diarthrotic (freely movable).

Age Range: High School – College

SKELETAL AND MUSCLE ACTION VIDEO

C9627-VHS
Hubbard Scientific
Tel: (715) 723-4427/(800) 289-9299

Video 5 min
Available Individually
Price: $26.20

This video uses X-Ray technology to photograph bones and muscles during movement.

Age Range: High School

14-PIECE TAKE-APART PLASTIC SKULL, MEDICAL QUALITY

SK52
Denoyer-Geppert
Tel: (800) 621-1014/(312) 561-9200
Fax: (312) 561-4160

Model
Price: $385.00

This model skull consists of 14 separate elements, and can be quickly dismantled and then reassembled by means of flexible snap-together plugs. Sutures have been simplified to facilitate assembly and disassembly. This model will prove to be an invaluable exercise in mastering the orientation and complex relationships of the bones comprising the adult human skull.

Age Range: High School – College

SKIN TEMPERATURE LAB

C6217
Hubbard Scientific
Tel: (715) 723-4427/800) 323-8368

Lab Kit
Price: $68.25

Help students understand the body's thermoregulating ability as they record skin temperature at various points and check heat loss and

SKIN

recovery patterns. The lab includes investigation of insulating capacity of different fabrics. The kit includes: temperature strip, thermometer, heat escape chamber, fabric samples, supply items, and complete activity packet with Teacher's Guide.

Age Range: High School

WATER AND ION MOVEMENT ACROSS FROG SKIN

4FCH-223-A
Intellimation
Tel: (800) 346-8355/(805) 968-2291
Fax: (805) 968-8899

Computer Program
Price: $29.00 (see below)

A HyperCard series focusing on lab preparation for specific frog anatomical structures.

Computer Requirements:
Mac: 1MB RAM or higher
System 6.0.5 or higher
HyperCard 2.0 or higher
System 7 compatible

Single copy: 4FCH-223-A $29.00
Site license: 4FCH-223-C $99.00

Age Range: College

BUGPLAY

Cuisenaire Company of America
Tel: (800) 237-3142
Fax: 800-551-RODS

Book
Available for Loan
Price: $29.95

A manual of 126 simple thought-provoking observational activities with insects for young children. The author presents sound factual information about 17 different species.

Age Range: Elementary

ANIMAL BEHAVIOR

TELL ME WHY VIDEOS

Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

Videos w/Teacher's Guides 30 min.
Available Individually
Price: $22.00 each

Award of Excellence — *Film Advisory Board*
Highest Rating — *Children's Video Magazine*

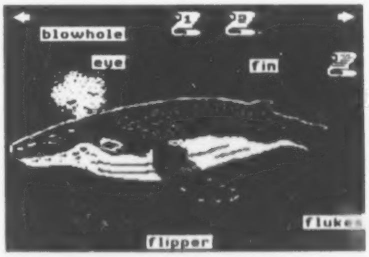
These engaging live videos will surely get lots of use. Based on the award-winning book series by Arkady Leokum, they fit into virtually every science curriculum or can be used for student reference. Locator numbers shown on the screen enable easy access to any topic. The teacher's guides include questions for discussion, a glossary, and suggested teaching strategies.

ABM021-CV — Tell Me Why: Animals and Arachnids
This expedition into the animal kingdom answers questions such as: Why do dogs bury bones? Does a leopard lose his spots? What is a spider's wed made of? Among the topics included are the following: Dogs, wolves, cats, horses, cows, spiders.

ABM017-CV — Tell Me Why: Insects
This volume answers such questions as: Do insects have blood? What does a butterfly eat? How can a fly walk on the ceiling? Topics covered include the following: insects, moths/caterpillars/butterflies, mosquitoes, flies, grasshoppers/crickets, bees, wasps, ants.

ABM019-CV — Tell Me Why: Life Forms, Animals and Animal Oddities
Your students will gain a great deal of knowledge about animals, from the smallest to the most unusual, as they learn the answers to such questions as: What are protozoa? Why do animals migrate? What animals live the longest? What is in echidna? Topics covered in this volume include the following: animals, vertebrates, warm & cold-blooded animals, animal history, worms, animal oddities.

ABM020-CV — Tell Me Why: Mammals
Teaches your students about fellow mammals as they learn the answers to questions such as: Why are whales considered mam-



WHALES

William K. Bradford Publishing Co.
Tel: (800) 421-2009
Fax: (508) 263-9375

Computer Program
Price: $72.00 each

Take your students on a whale watch and become part of the world of the humpback whale as they observe its habits and play. In completing the program, your students will be able to:

- Classify whales with other mammals and describe their similarities
- "Dissect" and label parts of a whale including blowhole, flipper, fin, flukes, eye, blubber, muscles, lungs, and bones
- Identify different whales by their shapes, sizes, and blows
- Identify and describe behaviors associated with humpback whales including blowing, sounding, flippering, lob-tailing, spy-hopping, and breaching
- Classify the humpback as a baleen whale and describe its eating habits

Computer Requirements:
Mac: 2MB RAM or higher
System 6.0.7 or higher
Color monitor with 256 color capability

Single copy: WHALM $75.00 (school price)
Lab Pack (10): WHALML $300.00 (school price)
Site license: WHALMN $450.00 (school price)

Age Range: Grades K – 3

BIOTECHNOLOGY

mals? Do polar bears hibernate? Is the chimpanzee a monkey? Included are the following topics: mammals, whales, pinnipeds, manatees, elephants, bats, primates.

ABM022-CV — Tell Me Why: Fish, Shellfish and Other Underwater Life

Turn a television into an aquarium and your students will find the answers to such questions as: Do fish have hearts? How does an octopus move? How did some fish get their names? Included are the following topics: fish, eels, goldfish, octopus, mollusks, lobster, sponges.

ABM018-CV — Tell Me Why: Birds and Rodents

Use this award-winning video in the classroom or as a reference for your students. Topics include the following: birds, bird sounds, migration, other birds, rodents, squirrels.

Age Range: Grades 5 – 9

ANTIBIOTIC SENSITIVITY STUDY KIT

Ward's Biology
TEL: (800) 962-2660
FAX: (800) 635-8439

Experimental Kit
Price: $49.75

How do drugstore antibiotics really perform? Your students answer this question when they observe the effects of six different commercial antibiotics on Gram (-) *Escherichia coli* and Gram (+) *Bacillus subtilis* bacteria. Kit includes 4 sterile petri plates, tryptic soy agar, transfer materials, 50 commercial Gram (+) antibiotic sensitivity discs per agent: Chloramphenicol, erythromycin, penicillin, streptomycin, tetracycline, and novobiocin. With teacher's guide and student worksheet.

Age Range: High School

A TUTORIAL IN RECOMBINANT DNA

5CKF-284-A
Intellimation
Tel: (800) 346-8355/(805) 968-2291
Fax: (805) 968-8899

Computer Program
Price: $29.00

The HyperCard tutorial to DNA technology.

Marcia Cordts, Ron Beloin, Jane Gibson, Cornell University

This NCRIPTAL award-winning tutorial explores current opinion, conjecture, and the potential implications of DNA technology. It also teaches cell processes such as DNA replication and RNA transcription.

Computer Requirements:
Mac: 1MB RAM or higher
System 4.2 or higher
HyperCard 1.2.5 or higher
System 7 compatible

Single copy: 5CKF-284-A $29.00
Site license: 5CKF-284-C $119.00

Age Range: Grades 10 – 12

BIOBLOX

Microbix Education Systems
Tel: (800) 794-6694
Fax: (203) 245-5923

Self-contained Laboratory Exercise Modules
Call for price information

Microbix Education Systems Bioblox Program brings you and your students closer to the real-world applications of biotechnology. Configured as a series of educational building blocks, Bioblox is designed to assist teachers in educating students on the basic principles of biotechnology, while providing a realistic and challenging setting. The program is a series of self-contained Modules. Each module includes a scientific experiment that demonstrates one or more scientific principles.

Each Bioblox module:

- Contains everything you and your students need to prepare and conduct the laboratory exercise
- Has sufficient material to conduct the experiment 8 times, enough for a class of up to 30 students
- Contains and illustrated Educator Guide, Student Guide, Laboratory Notebooks, and a video that demonstrates the experiment
- Is a self-contained and student-centered laboratory exercise
- Demonstrates how a specific principle is applied to modern biotechnology
- Challenges students to examine how biotechnology impacts the world around them
- Supplements and supports high school science curriculum

The Bioblox Program centers on the following critical areas: Production of New Medicines, Medical Testing and Diagnostics, Agriculture, Environmental Safety and Testing, and Production of Industrial Chemicals.

Age Range: High School

BIOCHEMICAL SCREENING OF BACTERIA STUDY KIT

Ward's Biology
Tel: (800) 962-2660
Fax: (800) 635-8439

Experimental Kit
Price: $109.00

Provide students with valuable experience in using commercial biochemical test tubes. Students match the tubes (Enterotube System) using a coding and identification guide to different strains of Gram (-) bacteria from the family Enterobacteriaceae. Kit contains Enterotubes to identify genus and species: *Enterobacter aerogenes*, *Enterobacter cloacae*, *Escherichia coli*, *Serratia marcescens*, and *Serratia liquefaciens*. Kit accommodates five groups of up to six students. Note: investigation requires two lab periods. Additional materials required: incubator (35 – 37°C), refrigerator, microscope, and marking pens.

Age Range: High School – College

BIOTECHNOLOGY

THE BODY AGAINST DISEASE

A5VH 1086
Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

Video w/Teacher's Guide 45 min
Price: $95.00

Students will be amazed at the intricacies of the immune system and the various methods of fighting off disease after viewing this detailed three-part study of the body's system of defense against disease. They will see how mechanical, chemical, and biological barriers, such as skin, tears, and mucous membranes, prevent invading pathogens from entering the body. The program then uses cancer and multiple sclerosis to illustrate what can happen when the immune system fails.

"...well-written and presents questions that should challenge the student and stimulate discussion."
Science Books & Films

Age Range: Grades 7 – 12

CELLSERV

Center for Advanced Training in Cell and Molecular Biology
Tel: (202) 319-5725

Lab Kit
Price: $20.00 each

Cellserv is a new program which provides high school biology classes with human cell culture materials without the time-consuming preparation and expense usually associated with obtaining them. The opportunity to compare various cell types, watch cell fusion, and observe the deleterious effects of cytotoxins makes this a great learning experience for students interested in pursuing careers in medicine, biology, biotechnology, and pharmacology. The materials are supplemented with detailed instructions, background information, and instructive videos. Prior cell culture experience on the part of the teacher is not necessary.

1 Kit:	$20.00
2 Kits:	$30.00
3 Kits:	$40.00
4 Kits:	$50.00
Each additional kit:	$15.00

Video rental (tissue culture techniques): $15.00

Age Range: High School – College

DEATH OF A RIVER/ WATER POLLUTION LAB ACTIVITY

Ward's Biology
Tel: (800) 962-2660
Fax: (800) 635-8439

Experimental Kit
Price: $77.00

Your students become waste managers of their own river system. After a thorough teacher's manual discussion of water pollution, and viewing a series of 35mm slides and overhead transparencies, the class will investigate different types of water treatment. All chemicals with collection bottles and droppers, along with support materials and MSDS for chemical reagents, are included for a high school classroom investigation.

Age Range: High School

DISINFECTANT SENSITIVITY STUDY KIT

Ward's Biology
Tel: (800) 962-2660
Fax: (800) 635-8439

Experimental Kit
Price: $64.75

Put the real-life claims of commercial disinfectants to the test, by pitting five samples against two common non-pathogenic bacterial strains. Kit includes living *Escherchia coli, Bacillus subtillis,* growth media and petri plates, control discs, transfer materials, plus samples of five household disinfectants. With teacher's guide and student worksheets; for a class of 30 students.

Age Range: High School

FECAL COLIFORM TEST KIT

Ward's Biology
Tel: (800) 962-2660
Fax: (800) 635-8439

Experimental Kit
Price: $72.00

Now your environmental science classes can easily test for the presence of *E. coli,* indicating sewage pollution. Contains instructions and materials sufficient for 20 tests. Note: Requires incubation at 37°C.

Age Range: High School

THE GENE, VIDEO AND BOOK

A5VH 1263
Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

Video & Book 36 min
Available as Set
Available Individually
Price: $130.00

The Gene is an introduction to genetics using a video together with a book. The program is presented in two parts, designed to spark your students' interest in this important area of modern science.

Part 1: Monsters to Mendel to DNA — The History of Genetic Research
Dramatizes the history of genetic discovery from Mendel in his monastery garden in Czechoslovakia, to Watson and Crick at the Eagle Pub in Cambridge, England.

Part 2: What is a Gene and How Does it Work?
Outlines in simple terms the basic picture we have today of what a gene is and how it works. Students will learn with the help of computer graphics about the genetic code, mutations, cloning, cell physiology, recombinant DNA, and more.

The accompanying book, with its detailed drawings, time lines, maps, and glossary, can be used alone or as an extensive supplement to the video.

BIOTECHNOLOGY

The book, softbound, 32 pages, can be ordered separately.

A5B 1262 (1 copy): $2.50
A5B 1261 (30 copies): $70.00

Age Range: Grades 7 – 12

THE IMMUNE SYSTEM

A1VH 9488
Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

Video w/Teacher's Guide 30 min
Price: $100.00

A good way to provide your students with an understandable description of the immune system and its function, this program uses simple diagrams and mircrophotographs to show the function of the B and T cells, antigen-antibody reaction, concepts of self and non-self, phagocytosis, and much more. In addition, the program covers recent advances in the study of disorders of the immune system, including material on AIDS, allergies, autoimmune diseases, and transplant rejection.

Age Range: Grades 5 – 9

THE HUMAN GENOME

Films for the Humanities and Sciences
Tel: (800) 257-5126
Fax: (609) 275-3767

Video
Price: $89.95

This program shows how genes are being identified and the moral and psychological dilemmas confronting doctor and patient when a disease can be genetically identified.

Age Range: High School – College

HYPERFLY

5CKF-521-A
Intellimation
Tel: (800) 346-8355/(805) 968-2291
Fax: (805) 968-8899

Computer Program
Price: $39.00

This simulation of crosses with Drosophila demonstrates simple mono-genetic inheritance.
Thomas Thelen, Central Washington University

This simulation is a great lab exercise as students begin to study genetics. Using phenotypes and ratios, students determine the four basic inheritance traits of various strains. Observation skills are developed as each fly offspring is shown for classification. Crosses involving 45 common strains of fruit flies help students develop deductive reasoning skills as they discover the type of dominant and recessive traits of a particular selected mutant strain of flies. Students can simulate generations of crosses quickly and easily on screen.

Computer Requirements:
Mac: 1MB RAM or higher
System 6.0.5 or higher
HyperCard 2.0 or higher
System 7 compatible

Single copy: 5CKF-521-A $39.00
Site license: 5CKF-521-C $169.00

Age Range: Grades 9 – 12

MacFLY ACADEMIC

4FCH-623-A
Intellimation
Tel: (800) 346-8355/(805) 968-2291
Fax: (805) 968-8899

Computer Program
Price: $29.00

Teach basic genetics with ease using this simulated lab.
Bob Doltar, Portland State University

MacFly Academic simulates a genetics lab, complete with fruit flies, allowing you to teach the basic principles of genetics with a minimum of set-up time and expense. Your students will complete three lab experiments using computer-generated Drosophila ten times larger that their real-life counterparts. Pre- and post-lab activities enhance the learning experience. A built-in glossary defines the necessary terms.

Computer Requirements:
Mac: 1MB RAM or higher
System 6.0.5 or higher
Color monitor recommended
System 7 compatible

Single copy: 4FCH-623-A $29.00
Site license: 4FCH-623-C $99.00

Age Range: High School – College

MacFLY SCHOOL VERSION

5CKF-1232-A
Intellimation
Tel: (800) 346-8355/(805) 968-2291
Fax: (805) 968-8899

Computer Program
Price: $55.00

This simulated lab demonstrates basic genetics in action.
Bob Doltar, Portland State University

Teach the basic principles of genetics with minimum set-up time and expense. MacFly allows your students to simulate the breeding of Drosophila fruit flies. They will successfully cross-breed two generations of flies, identifying the dominant and recessive genes, and they will investigate how sex-linked traits are inherited. This program also includes an easy-to-access glossary.

Computer Requirements:
Mac: 1MB RAM or higher
System 6.0.5 or higher
Color monitor recommended
System 7 compatible

Single copy: 5CKF-1232-A $49.00
Site license: 5CKF-1232-C $219.00

Age Range: Grades 9 – 12

OIL DEGRADING MICROBES- OIL SPILL LAB ACTIVITY

Ward's Biology
Tel: (800) 962-2660
Fax: (800) 635-8439

Experimental Kit
Price: $92.75

This fascinating kit explores a cutting edge topic, while at the same time it serves as an

BIOTECHNOLOGY

EMBRYOLOGY

excellent introduction to biotechnology. Specially designed and uniquely available through Ward's, this activity allows you to study a process currently being used to clean up oil spills, such as in the Persian Gulf. Students will actually grow oil-degrading microbes in a medium containing a petroleum product, observing how these cells grow and sustain life by degrading oil. Your class gains a firm understanding of naturally occurring microbes that have the ability to degrade hydrocarbons, particularly petroleum products. An ideal study tool for high school and college biology and environmental science classes, the kit contains all materials needed for up to 24 students. Included is a teacher's guide plus study and analysis sheets.

Age Range: High School – College

SERIES 100 "HANDS-ON" INTRODUCTORY EXPERIMENTS

Edvotek
Tel: (800) 251-5990
Fax: (301) 340-0582

Experiment Modules
The price of each module varies. Please call for more information.

Series 100 experiment modules are designed to minimize the requirements for expensive biotechnology teaching laboratory equipment. Experiments which involve electrophoresis contain DNA samples which are predigested with enzymes, or protein samples, which are ready for analysis by electrophoresis. Electrophoresis experiments contain the necessary buffers, staining reagents, DNA or protein samples for 2 gels.

Age Range: High School – College

SERIES 200 "HANDS-ON" EXPERIMENTS

Edvotek
Tel: (800) 251-5990
Fax: (301) 340-0582

Experiment Modules
The price of each module varies. Please call for more information.

Series 200 experiment modules cover various aspects of biotechnology. DNA electrophoresis experiments include the DNAs, enzymes and reaction buffers to digest DNA. These experiments do not include agarose, buffer or stain, and require automatic micropipets and water baths. DNA electrophoresis experiments are designed for staining with safe Methylene Blue Plus™ Staining Reagents. Protein electrophoresis include pre-poured polyacrylamide gels, buffers and Protein Plus™ stain.

Age Range: High School – College

SERIES 300 "HANDS-ON" EXPERIMENTS

Edvotek
Tel: (800) 251-5990
Fax: (301) 340-0582

Experiment Modules
The price of each module varies. Please call for more information.

Series 300 experiments are designed for the undergraduate college level and encompass complex advances in biotechnology. They involve techniques often performed in research laboratories and require a larger commitment of time for preparation and completion. Series 300 DNA electrophoresis experiments require the careful handling and proper disposal of ethidium bromide stain, as well as a short wave ultraviolet light source for visualization of DNA.

Age Range: College

SIMULATED BLOOD SMEARING LAB ACTIVITY

Ward's Biology
Tel: (800) 962-2660
Fax: (800) 635-8439

Experimental Kit
Price: $23.75

Finally, a safe method to introduce one of the most important examinations used in the hematology lab. Ward's simulated blood contains nonbiological cellular components which represent red and white blood cells and platelets. Students can use simulated blood to perform every step of a blood smear, from learning the procedure to observing simulated red and white blood cells and platelets under a microscope. For ease in identification, the cellular components have been prestained. The complete kit includes 3 ml simulated blood, plus microscope slides and instructions. For a class of 24 students.

Age Range: High School

TOTAL COLIFORM TEST KIT

Ward's Biology
Tel: (800) 962-2660
Fax: (800) 635-8439

Experimental Kit
Price: $72.00

Coliform colonies are easily grown and distinguished at room temperature on Millipore filters, in a routine test used by professionals to detect possible pollution in streams, rivers, and lakes. Kit uses a special growth medium that causes coliform colonies to take on a distinctive green color. Contains instructions, and materials sufficient for 20 tests.

Age Range: High School

ATLAS OF PRENATAL RAT BRAIN DEVELOPMENT

CRC Press
Tel: (800) 272-7737/(407) 994-0555
Fax: (800) 374-3401

Atlas
Price: $125.00

The result of 3 decades of original research and instruction by Drs. Joseph Altman and Shirley A. Bayer, this Atlas provides a complete, state-of-the art presentation of the developing prenatal rat brain. Altman and Bayer revolutionize the study of the highly vulnerable prenatal brain and bring us closer to understanding its malfunctions, deficits, and abnormalities. Their contributions to the field of brain research, and hence to our knowledge of brain disorders, are unsurpassed.

The Atlas of Prenatal Rat Brain Development contains more than 265 plates —

EMBRYOLOGY

INNOVATIVE TEACHING TOOLS

each plate accompanied by a computer-aided drawing, a 3-dimensional reconstruction of brain slices never before achieved with such accuracy and clarity, and a new, user-friendly alphanumeric coding system that allows for easy identification of brain regions.

This Atlas contains the following:

- From 20 to 35 plates each of 10 embryonic ages in sagittal and coronal planes, 2 to 3 times more ages than any other Atlas
- The highest quality micrographs of brain regions, selected and cut with the unparalleled skill of the authors
- Unprecedented 3-D reconstructions of the brain at each embryonic age
- Simplified and more rational alphanumeric coding system, more consistent and user-friendly than any other coding system presently in use
- Incomparable computer-aided drawings of brain regions at each embryonic age
- Detailed and logical classification of the germinal matrix at early stages
- 3 decades of original research by Altman and Bayer, two of the world's leading authorities in developmental neurobiology (Alman's and Bayer's research is the primary source material in other Atlases)

This volume has a hardbound lay-flat binding for easy access, and contains a double systematic and synonym index for the unique advantage of cross-referencing. A 30-day examination period is allowed.

Age Range: College

DEVELOPMENT OF THE AMPHIBIAN EMBRYO

ACL400-4CV
Clearvue/eav
Tel: (800) 253-2788
Fax: (800) 444-9855

Video w/Teacher's Guide 15 min
Price: $75.00

Your students can be present for the complete cycle of the development of an amphibian embryo and draw parallels to the development of all vertebrates. Starting with a single, unfertilized egg, development proceeds through fertilization, sex determination, and mitosis until the blastula is formed. The formation of the ectoderm, primitive gut, and the notochord cells follow. The embryo becomes elongated, with the spinal chord, brain, eyes, and gill slits developing. Further development, including the back, forelegs, and beating heart is shown.

Age Range: High School

FERTILIZATION VIDEO

C9628-VHS
Hubbard Scientific
Tel: (715) 723-4427/(800) 323-8368

Video 5 min
Available as Set
Available Individually
Price: $26.20

This is one of a series of seven single-concept color-enhanced videos, each presenting basic anatomical information in a concise format.

This video provides an overview of the structure and function of the reproductive organs. It includes footage of actual fertilization and formation of fertilization membrane.

Age Range: Grades 7 – 12

ANATOMY APRON

Cuisenaire Company of America, Inc.
Tel: (800) 237-3142
Fax: (800) 551-RODS

Model
Price: $19.95

Kids will love to learn how their own body works when they wear this unique learning tool. The apron uses velcro to fasten the heart, liver, stomach, small intestine and kidneys to washable vinyl. The teacher's guide details an introductory lesson for each organ, a separate lesson on using the anatomy apron, background information for the teacher and reproducible follow-up activities for students.

Age Range: Grades K – 2

BLUBBER BUSTERS

DO26020
Health Edco
Tel: (800) 299-3366, x295
Fax: (817) 751-0221

Model
Price: $89.00

These models of high-calorie food feel just like real fat! Sized so that each ounce of fake fat represents 220 calories of the real food, the models are a tactile method of showing

MITOSIS & MEIOSIS

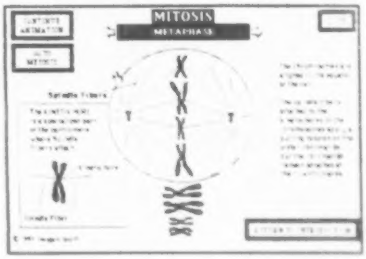
5CKF-553-A
Intellimation
Tel: (800) 346-8355/(805) 968-2291
Fax: (805) 968-8899

Computer Program
Price: $29.00

Dougald Scott, Cabrillo College

This computer program uses animation to demonstrate the comparative processes of mitosis and meiosis as an animal cell progresses through all stages of division.

Computer Requirements:
Mac: 1MB RAM or higher
System 6.0.5 or higher
System 7 compatible



Single copy: 5CKF-253-A $29.00
Site license: 5CKF-553-C $119.00

Age Range: Grades 8 – 12

INNOVATIVE TEACHING TOOLS

that about every 3,500 calories eaten but not burned off result in one pound of excess body fat. Fifteen "snacks" are included in a carrying case that measures 14" x 10" x 3 1/2".

Age Range: Grade 7 – College

CANCER AND METASTASIS

Films for the Humanities and Sciences
Tel: (800) 257-5126
Fax: (609) 275-3767

Video 39 min., color
Price: $149.00
Rental: $75.00

This program studies the biological processes by which the body reproduces cancerous tumors and summarizes the results of current research. The various steps or metastasis are clearly demonstrated in film and computer animation. A film segment of real human tissue shows tumor cells moving in a regulated manner under the direction of "leader cells." Computer animation illustrates how a normal cell becomes cancerous. Treatments under development for the prevention of metastasis in certain cancers are summarized.

Age Range: High School – College

DISCOVERY SCOPE

Discovery Scope, Inc.
Tel: (800) 398-5404

Microscope
Price: $35.00

Discovery Scope is a hand-held, wide-field microscope designed for viewing the incredible variety of small living things found in every lawn, garden or pond. With a few minutes practice, your students will be using Discovery Scope to see stunning views of the microworld around them.

Age Range: Grade 6 – College

EPPIE

4FCH-130-A
Intellimation
Tel: (800) 346-8355/(805) 968-2291
Fax: (805) 968-8899

Computer Program
Price: $35.00

A simulated exploration of disease control.
Antony Unwin, Michael Lloyd, Graham Wills, Trinity College, Dublin

Explore the spread of disease through simulations of spatial epidemics. From user-specified population and disease parameters, the program demonstrates how particular diseases might behave among populations. Students can specify probabilities for infection, illness, recovery, and death.

Computer Requirements:
Mac: 1MB RAM or higher
System 6.0.5 or higher
System 7 compatible

Single copy: 4FCH-130-A $35.00
Site license: 4FCH-130-C $129.00

Age Range: College

GLOBS OF FAT

DO26031
Health Edco
Tel: (800) 299-3366, x295
Fax: (817) 751-0221

Model
Price: $62.95

This fun product will both amuse and motivate your students. Made of BIOLIKE™ material, the Globs actually feel and look like real fat. Let your students see for themselves what that extra one pound or five pounds of fat really feels like! The Globs of Fat come in a set of one- and five-pound sizes in a carrying case.

A single Glob of Fat (1 lb.) is also available for $19.95 (#DO26030).

Age Range: Grades 7 – 12

INFECTION CONNECTION

4FCH-594-A
Intellimation
Tel: (800) 346-8355/(805) 968-2291
Fax: (805) 968-8899

Computer Program
Price: $39.00

An interactive review of microbiology and infectious diseases.
Brett Bartlett, Sanford Sharp, University of Missouri

This interactive computer program will let your students investigate the maladies of 31 patients, then select diagnostic tests and make an actual diagnosis. This program also offers comprehensive reviews of materials commonly covered by National Board Exams, FLEX, MCAT, Pathology Boards, and other microbiology course exams.

Computer Requirements:
Mac: 2MB RAM or higher
System 6.0.5 or higher
HyperCard 2.0 or higher
System 7 compatible

Single copy: 4FCH-594-A $39.00
Site license: 4FCH-594-C $159.00

Age Range: College

MacEXERCISE

4FCH-1194-A
Intellimation
Tel: (800) 346-8355/(805) 968-2291
Fax: (805) 968-8899

Computer Program
Price: $29.00

A tool for measuring the effect of exercise on body weight.
Shortie McKinney, Drexel University

Would you like to know how many calories you use for each of your daily physical activities such as sleeping, walking, running, cycling, and swimming? Enter the time spent on each activity, as well as your age, height, weight, and gender, and MacExercise will calculate the calories burned. The program also determines the impact exercise will have on your weight. Will adding 30 minutes

INNOVATIVE TEACHING TOOLS

of brisk walking result in the loss of 10 pounds? MacExercise will show you through the use of graphics. This is an excellent program for students in health-related courses interested in tracking the benefits of exercise, or determining how specific exercises can impact weight control.

Computer Requirements:
Mac: 1MB RAM or higher
System 6.0.5 or higher
System 7 compatible

Single copy: 4FCH-1194-A $29.00
Site license: 4FCH-1194-C $99.00
Student edition: 4FCH-1194-S $5.80

Age Range: College

MICROCOSMOS

Kendall Hunt Publishing Co
Tel: (800) 338-5578

Curriculum Guide
Available for Loan
Price: $24.95

This innovative curriculum guide leads students and teachers into the fascinating world of sub-visual beings whom we barely notice in our everyday life. It features over 35 exercises including an exploration of the micro-dependent processes necessary for breadmaking and pickling, building a microbial city, uncovering the microbial world that exists in a puddle, and other forms of "micro-sleuthing." Game boards, overhead masters, 3-D cut-outs and a Teacher's Guide with over 100 illustrations are included. Developed in conjunction with the Microcosmos Project at the Boston University School of Education, these hands-on activities will open students' eyes to a riveting new way of seeing the natural world around them.

For information on teacher training workshops for Microcosmos, please contact:

Douglas Zook
Boston University School of Education
605 Commonwealth Ave.
Boston, MA 02215
(617) 353-2000

Age Range: Grade 7 – High School

MICROSLIDE LESSON SETS

National Teaching Aids
Tel: (516) 326-2555

Slides
Price: $4.50/set

Each Microslide Lesson Set contains a series of 8 thematically-related 35mm color images expertly photographed through a microscope. Special staining and lighting techniques, arrows and callouts help the student locate important details. Over 140 subject titles are available, including chick embryology, the circulatory system, binary fusion, animal parasites, the skeletal system, evolution, the life cycle from tadpole to frog, pond life, and many, many more. Extensive laboratories, tests, classroom activities and other assignments can be built around each microslide set. Stimulating lesson plans are also included.

Microslide Set : $4.50 each, with a discount on 10 or more
Microslide Viewer: $7.25 each, with a discount on 10 or more

Age Range: Grade 7 – College

NUTRITION FLIP CHART

D043124
Health Edco
Tel: (800) 299-3366, x295
Fax: (817) 751-0221

Chart
Price: $49.95

Display the simple truths of good basic nutrition with this colorful 12" x 17" flip chart. While food alone cannot make you healthy, good eating habits based on moderation and variety can improve your health. This chart discusses the role of soluble and insoluble fiber, the need to eat less fat, salt and sugar, and the role of vitamins, calcium and protein.

Age Range: Grades 7 – 12

OWL PELLET KIT

The Nature Store
Tel: (508) 362-6429

Activity Set
Price: $26.50

Motivating and stimulating, this hands-on study kit presents a unique and different method for studying animal skeletons, food chains and populations. Clearly illustrating a different form of digestion, the stripped bones, teeth, hair, and feathers that are not digested are pressed into a pellet by the owl, and then regurgitated. Students can easily dissect the pellets and identify the contents. Then, students can assemble the bones, identify and study the skeletons, and by inference, the feeding habits of owls and the role they play in the food chain.

The kit includes: 12 pellets (2 students per pellet), 1 large food chain chart, 1 large bone chart, 6 individual bone charts (for group study), Teacher's Guide, and step-by-step teaching suggestions. This kit has been recommended by the National Science Teachers Association (NSTA), Project Wild, Learning Magazine, and the leading educational centers throughout the country.

Additional Pellets can be ordered for $1.25 each.

Age Range: Grades 3 – 12

THE "IMMUNITY MADE EASY" KIT

National Teaching Aids
Tel: (516) 326-2555

Activity Set/Teacher's Guide
Available for Loan
Price: $109.95

This fascinating classroom activity kit utilizes over 150 vinyl acrylic pieces on a large board to demonstrate the wonders of the human immune system. Using a hands-on approach, students can simulate how the immune system attacks diseases such as AIDS and cancer. Activities include learning how vaccines work; demonstrating the operation of microphages, antibodies, allergies, and autoimmune reactions; and cloning T and B cells to produce killer, suppressor, memory

INNOVATIVE TEACHING TOOLS

SCHOOL HATCHING PROJECTS

and helper cells. This kit comes complete with a comprehensive Teacher's Guide, lesson plans, and a set of reproducible worksheets.

Age Range: Jr. High – College

THE BIO SCI VIDEODISC

Videodiscovery, Inc.
Tel: (800) 548-3472

Videodisc
Price: $549.00

This is a complete and engrossing curriculum which features 6,000 full color images, diagrams and animated sequences, in addition to 13 short teaching films. A wide variety of topics are covered, including biochemistry, cytology, plant histology, animal histology, vertebrate organ systems, movement, behavior, diversity in plants and animals, and more.

Age Range: High School – College

THE LIFE/FORM INJECTABLE TRAINING ARM

Fisher-EMD
Tel: (800) 955-1177/(312) 378-7770
Fax: (312) 378-7174

Model
Available for Loan
Price: $459.00

This injectable arm model is perfect for Anatomy/Physiology and pre-med students as a circulatory system simulation from which they can draw blood. This arm has as uncanny realistic look and feel, from its latex veins and foam muscle tissue to its actual fingerprints.

Age Range: High School – College

THE MODERN BIOLOGY LABORATORIES MANUAL

Holt, Rinehart, & Winston
Tel: (800) 225-5425

Book/Curriculum Guide
Available for Loan
Price: $13.80

This manual features 53 projects that range from studies of DNA manipulation to the relationship between sound and pupil dilation. Many ecology projects are also included, such as owl pellet "dissection" and an exploration of how acid rain affects seed germination. Each lesson includes an introduction, pre-lab preparation, post-lab analysis, in-class discussion, and suggestions for further investigation. One frog dissection is included, which the editors clearly label as "optional."

The 1989 version of this manual accompanies the high school textbook *Modern Biology* (Towle: 1989 or 1991 versions) but can be purchased separately.

Teacher's Edition: $15.75

Age Range: High School – College

SPECIES DIVERSITY

Intellimation
Tel: (800) 346-8355
Fax: (805) 968-8899

Computer Program
Price: $29.00

A thought-provoking look at those species at risk.
Mark H. Evans, University of Wisconsin

This program explores issues relating to the extinction and the loss of biological diversity. From fish and trees to mammals and invertebrates, the program examines hundreds of species' native ranges, development, genetic make-up, and more. It also addresses factors (pollution, human population, etc.) that are diminishing numbers and discusses what can be done to reverse the pattern of depletion.

Computer Requirements:
Mac: 2MB RAM or higher
System 6.0.5 or higher
Hypercard 2.0 or higher
Other: color monitor recommended

Site License: $119.00

Age Range: Grades 11 – College

REPLACING SCHOOL HATCHING PROJECTS

United Poultry Concerns, Inc.
Tel: (301) 948-2406

Catalog
Price: $3.50

This catalog was developed in response to the growing number of requests from parents and teachers for humane alternatives to the mechanical hatching of live chicks in the classroom. It is designed to give educators a list of up-to-date learning materials and ideas that can be used interactively. It lists books, videos, videodiscs, transparencies, microslides, models, and hands-on ecology projects. Each resource includes a synopsis with easy ordering information and purchase price.

Age Range: Grades 2 – 12

WONDER & RESPECT

THE ENDANGERED SPECIES HANDBOOK

Animal Welfare Institute
Tel: (202) 337-2332

Book
Available for Loan
Price: $10.00

This book contains everything you and your students always wanted to know about endangered species, from the causes and consequences of vanishing wildlife, to how citizen action influences legislation. Students learn to appreciate biology as the "study of life" when they take part in a variety of hands-on interdisciplinary projects pertaining to animal behavior, ecology, the environment, and vanishing wildlife.

One copy will be supplied free for teachers.

Age Range: Grade 7 – College

EYEWITNESS: INSECT

Ward's Biology
Tel: (800) 962-2660
Fax: (800) 635-8439

Video 35 min.
Price: $12.95

Here, your students can safely examine the wonders of the insect world and the true importance of these amazing, industrious creatures. They'll also find revealing answers to "How do insect wings work?" and "Just how big can a bug grow?" State-of-the-art special effects and stunning graphics bring the world of insects to life. Live-action video is 35 minutes.

Age Range: Grades 7 – 12

INSECT CLASSIFICATION

Intellimation
Tel: (800) 346-8355
Fax: (805) 968-8899

Computer Program
Price: $29.00

This information-packed tutorial introduces important facts about insects and how they are classified. Working through the illustrated material, self-reviews,and mini-quizzes, students discover how insects differ from one another and are thus classified, how they develop, and their roles in our ecosystem. An Insect Directory covering 15 types of insects is included.

Computer Requirements:
Mac: 1MB or higher
System 6.0.5 or higher
Hypercard 2.0 or higher

Site License: $119.00

Age Range: Grades 7 – 12

DISSECTION vs. ALTERNATIVES: A Cost Comparison

How does the cost of buying dead animals for dissection compare with buying humane alternatives? The figures below are based on a hypothetical school's needs for a three year period. Reusable materials (dissection tools, trays, computer programs, models, charts, etc.) are treated as one-time purchases. Costs are based on a ratio of two students per animal dissected (45 animals a year, 135 animals over three years). This comparison assumes that the school already has computers, but no VCR or CD-ROM players. Median prices of preserved animals were obtained from the 1996 Carolina Biological Supply Company Catalog. Alternatives (1996 prices) were selected from available lists, catalogs and databases.

CAT

Alternatives		**Dissection**	
anatomy model	$ 400.00	($42.65 per animal) x 135	$5,757.75
anatomy videotapes (8 tapes)	$1,295.00	Supplies	$ 974.25
dissection video (39 min)	$ 70.00		**$6,732.00**
64 page dissection manual (x 30)	$ 285.00		
CatLab (computer program)	$ 150.00		
VCR	$ 190.00		
	$2,390.00	**(alternatives save $4,342.00)**	

BULLFROG

Alternatives		**Dissection**	
dissection video (42 min)	$ 75.00	($9.30 per animal) x 135	$1,255.50
Frog Inside Out video (67 min)	$ 159.00	Supplies	$ 974.25
pictorial atlas (x 30)	$ 268.50		**$2,229.75**
Great American Bullfrog (model)	$ 533.00		
The Digital Frog (CD-ROM)	$ 150.00		
DissectionWorks (CD-ROM)	$ 60.00		
BioCam dissection chart (x 30)	$ 90.00		
VCR and CD-ROM player	$ 515.00		
	$1,850.50	**(alternatives save $379.25)**	

FETAL PIG

Alternatives		**Dissection**	
fetal pig model	$ 295.00	($5.73 per animal) x 135	$ 773.55
The Fetal Pig (computer program)	$ 30.00	Supplies	$ 974.25
BioCam dissection chart (x 30)	$ 90.00		**$1,747.80**
DissectionWorks (CD-ROM)	$ 59.95		
56 page dissection manual (x 30)	$ 285.00		
fetal pig anatomy video (26 min)	$ 69.95		
VCR and CD-ROM	$ 515.00		
	$1,344.90	**(alternatives save $402.90)**	

The above information was graciously provided by:
The Humane Society of the United States, 2100 L Street, NW, Washington, DC 20037
Phone: 301-258-3046 / **Fax:** 301-258-3082 / **E-mail:** hsuslab@ix.netcom.com

Notes

> *"If biology were taught in a manner which developed a sense of wonder and reverence for life, and if students felt inwardly enriched from their study of life, these students would formulate as a lifelong goal the steadfast determination to protect and preserve all life, and would bring healing to a world desperately in need of it."*
>
> \- G.K. Russell

Ethical Science Education Coalition

167 Milk Street, #423
Boston, MA 02109-4315
(617) 367-9143

BEST COPY AVAILABLE

Promoting innovative, non-animal teaching tools in science education